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ABSTRACT

Equity, quality, and cost in higher education is examined as it exists within the Republic of Korea. Chapter 1 of the report explores the background rationale for the study, which stemmed from an earlier study's conclusion that the Asian Pacific Region was experiencing deteriorating quality levels, access discrimination, and serious resource availability in its higher education programs. Chapter 2 reviews the concept, scope, and methodology of the study. Chapter 3 examines the overall health of higher education in the Republic of Korea within the context of each area of the study's focus (equity, cost, and quality), their interrelationships, and a historical overview of higher education within the country. Here, statistical information is presented on such areas as student enrollment, tuition variances between institutions, financial aid analyses, staff qualifications, and overall facility development and adequacy. Chapter 4 provides a comparative analysis of two case studies (Seoul National University and Yonsei University) to examine equity, cost, and quality in higher education as it applies to a national university and a private university of equivalent size. Chapter 5 reviews educational policies, programs, and strategies over the last 5 to 10 years that address equity, quality, and cost issues. Recommendations and conclusions are discussed. Contains 51 references. (GLR)

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PREFACE

This publication is a direct outcome of an inter-country research project on equity, quality and cost in higher education which was sponsored by UNESCO Principal Regional Office for Asia and the Pacific (PROAP)[1].

Within a framework provided by the UNESCO Regional Co-operative Programme in Higher Education for Development in Asia and the Pacific, three major programme areas have been identified. These are (1) innovation in higher education, (2) policy, planning and management of higher education, and (3) special research studies in higher education for development. More than seventy institutions and agencies, designated by participating Member States, have formed a network to further the regional programme in higher education and are organized under three consortia corresponding to the three programme areas above. One of such institutions designated by the Government of Korea is the Korean Council for University Education (KCU).

The Consortium on Special Research Studies in Higher Education for Development held its initial meeting in Bangkok from 28 February to 5 March, 1983 and proposed six possible research projects. The present study on equity, quality and cost in higher education is essentially an integration of three of the original proposals.

As a next step, a research design meeting conveyed jointly by PROAP and KCU was held in Seoul from 8 to 12 July, 1985. Participants from four countries, namely – Australia, India, Indonesia and the Republic of Korea – and staff members from UNESCO PROAP attended the meeting which drew up a detailed research proposal. The study was then undertaken in Australia, India and the Republic of Korea.

The present study on the Republic of Korea was carried out by KCU. UNESCO wishes to express its sincere thanks and appreciation to KCU for its constant support and co-operation in the successful completion of the project. Special thanks are due to Dr. In-suk Chang, Secretary General of KCU and Dr. Chong Yul Park, former Director of the Division of Evaluation Management, KCU for their guidance and scholarly contribution.

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[1] **Before 1987, it was UNESCO Regional office for Education in Asia and the Pacific (ROEAP).**

Chapter One

BACKGROUND AND OBJECTIVES

Background rationale

In the recent past, enrolment in higher education has increased rapidly in most countries of Asia and the Pacific region. Enrolment has more than doubled in majority of the countries during the period 1970-1982. As education is perceived to help the social mobility of individuals and to contribute to the development of a nation, the pressure of enrolment is likely to continue in the future.

The Consortium on Special Research Studies in Higher Education at its meeting in Bangkok, 1983, identified unequal access to higher education of different groups in a country and deterioration in the quality of education through lack of resources and their inefficient utilization, as among the serious problems of higher education in Asian countries.

In this connection, the preparatory meeting on research design, specification of work for participating institutions and detailing of operational procedures, time scheduling and co-ordination for carrying out the research project, was convened by UNESCO PROAP and the Korean Council for University Education in Seoul, 1985. In order to implement the research study on equity, quality and cost in higher education, Australia, India and the Republic of Korea were the countries selected for the research.

Coupled with the issues of equity and quality is the issue of resources for education. In the recent past, resources for education have been limited, as there is competing demand for resources by various sectors of development. Research can investigate how limited resources affect access, quality and cost of higher education and whether alternative methods of providing higher education can improve efficiency and reduce costs. Some studies have indicated that resources below a "minimum critical unit" result in higher cost, poorer quality, and lower access. Such studies are, however, too limited in number and scope to suggest any definite conclusion. Therefore these aspects need to be examined.

The concern for issues of equity, quality and cost arises because higher education is an important instrument for developing social and other capabilities among the people to face the challenges of sub-groups in the development. If these capabilities are unequally distributed among different sub-groups in the population, it adversely affects the development process of the country, and also causes social tension. Not only should there be an equitable distribution of opportunities to follow higher education, but the quality of these provisions need to also be of a higher order across the whole system to meet the challenges of modern competitive and the technological fast-growing society. To meet these twin objectives, it is difficult to allocate sufficient resources for higher education in a resource scarce situation. Hence, there is also a need to explore alternative cost effective/efficient methods of developing these capabilities through different ways of providing higher education. The present research study may be seen as a modest attempt in this context.

In modern society, universities are characterized by their diversity, openness and professionalism which push a university to change from an elite model to a universal one. In Korea, the enrolment ratio of the college age group was a mere five per cent in 1955, ten per cent in 1970, 18 per cent in 1980, and astonishing 34 per cent in 1984. This surprising expansion was caused by the revision of university and college enrolment quotas. In 1979 the Ministry of Education increased the enrolment quotas of each institution. The policy direction for the increase of university enrolment quotas began to solve the problems of students who failed the university entrance examination, contributing to the alleviation of the out-of-school study designed for repeaters to acquire a high score in special subjects in the university entrance examination and satisfying the demand for highly technological manpower and the social needs for generalization of higher education for all.

The policies of higher education, therefore, were based on free competition and equal opportunity. Equal opportunity refers to the availability of places for students in the educational system, the social or institutional support for the attendee and the economic power of individuals to fulfill their right to an equal opportunity at education. First of all, it is supposed that educational systems should meet and give attendees an equal opportunity of attendance. Then this equal opportunity is extended to a more substantial claim that all of the resources should be distributed equitably among social groups irrespective of location, sex, social origin, and so on.

In addition to these, consideration is given to some other things. The ideal educational system would lead to the systematic equalization of opportunities which would minimize the difference between social background and the dependent variables, particularly educational achievement. And the equalization of opportunity would also compensate the socially weak background for the educational quota system, scholarship system, and many kinds of programmes.

The rapid quantitative expansion of higher education in Korea in the last two decades exerted bad influence upon its qualitative development. In the Table 1.1, quantitative indicators such as the number of students, institutions, teaching staff, and students per 1,000 inhabit show the noticable expansion of higher education during the last decade. The qualitative indicators such as students per teaching staff and books per student, on the other hand, prove that the quality of higher education has been decreasing.

During the last two decades, one of the major educational policy directions was equal educational opportunity for all. This policy direction pushes higher education to be open to all. As a result, excellence and elitism in higher education has decreased. Compared with the quality of the students in the past, the quality of the students in recent years has comparatively decreased. Even though the class size of universities was small two decades ago, the educational contents were very weak. Nowadays the educational contents in university are better, but the quality of instruction is lower because of overcrowdedness in class.

In order to improve the quality of higher education, we have to strengthen its functions. According to the university evaluative criteria models developed by the Korean Council for University Education, the functions of higher education are teaching-learning activities, research activities, supervision-welfare activities, social service activities, administrative and financial management, and educational conditioning. These activities will promote the quality of education in each institution.

Table 1.1 Quantitative and qualitative indicators of higher education

Classification	*Contents*	*1975*	*1984*
Quantitative Indicators	1. Increase in the Number of Students	278,719 (100)	1,192,936 (428)
	2. Increase in the Number of Institutions	198 (100)	441 (223)
	3. Increase in the Number of Teaching Staff	11,416 (100)	32,215 (282)
	4. Students per 1,000 Inhabitants	6.9 (100)	29.4 (426)
Qualitative Indicators	1. Number of students per Teaching Staff	20.9 (100)	37.0 (177)
	2. Books per Student	26.5 (100)	13.5 (50)
	3. Public Expenditure per Student (Unit: Won)		
	National School	350,400 (100)	1,370,600 (391)
	Private School	298,700 (100)	1,264,500 (423)

Furthermore, without appropriate educational expenditures, we cannot expect to improve the quality of higher education which is beset with the expenditures necessary for the recruitment of faculty, the development of curriculum, the internationalization of research activities, the modernization of welfare activities, and the appropriate adjustment of physical facilities and equipment. In our thoroughly monetized economy, costs usually appear in the form of expenditures of money. Especially, the cost per student is the popular indicator in determining educational expenditures. Traditionally, cost per unit was computed simply by adding up total institutional expenditures for all purposes and dividing the sum by the number of students. But the calculation of the number of students also had its complications. Some students attend class part-time and others full-time. To estimate the number of students effectively, the concept of full-time-equivalent student was devised.

In addition to this cost concept, attention has to be given to efficiency. The degree of efficiency in any human undertaking is measured by comparing means with ends. It is measured as a ratio between the two. The greater the ends achieved with given means, or the fewer the means used to achieve given ends, the greater the efficiency.

From this point of view, the study thus investigated problems and issues concerning equity, quality and cost in higher education in Korea; brought together and analysed the experience of Korea on these aspects; and suggested policies, strategies and measures to promote equity and improve quality through cost-effective methods.

Chapter Two

CONCEPTS, SCOPE AND METHODOLOGY

Concepts

The concepts of equity, quality and cost for the purpose of this study were approached as follows:

Equity: The term equity may be broadly referred to as "quality of being equal or even handedness in dealing". Equitable opportunities for higher education exist when no sub-group of potential students is disadvantaged in terms of access, choice and quality of education. The dimensions of equity include:

A. Access: Possible inequities may be revealed by comparisons such as enrolment by male and female, urban and rural, advantaged and disadvantaged regions, different social and economic groups, and by different ethnic groups.

B. Choice: Here an analysis can be made of factors such as students enrolled in general and professional courses, students enrolled in full-time and part-time courses, content of courses with possible bias towards any groups, and content of similar courses in different institutions.

C. Equity of inputs: Possible inequities may be shown by comparisons, for example, between government and private institutions, urban and rural institutions, institutions attended by different social groups, contents not biased towards any groups, and between similar contents for similar courses of study.

Quality: Quality implies in general a higher level and standard of performance of the system of higher education. This implies high quality of input, processes and output of the education system. Dimensions of quality include:

A. Input: Variables are, for example, faculty qualifications; students abilities and prior knowledge; institutional resources and facilities such as library, laboratories, and teaching space; and relevance of curriculum content to societal needs.

B. Processes: Include such factors as methods of teaching; class size for lectures, tutorials, laboratory classes and workshops; contact hours with students; guidance and counselling services for students; opportunities for interaction with the community; and opportunities for research and development.

C. Output: May be revealed by taking into account such factors as scholarly productivity by staff, performance by students, service to the community, and completed research.

Costs: Costs may be defined as the amount of resources spent on providing higher education. Dimensions of costs include:

A. Institutional costs: These may be broken down in various ways, for example, recurring and capital costs; costs on staff salaries, administration, facilities, research, library, equipment, teaching/learning materials; costs of students' aid such as scholarships and grants; and unit costs per student enrolled or per graduate (recurrent and/or fixed cost components); this may be further broken down by programmes of studies or courses as appropriate.

B. Private cost: These may include tuition costs by courses, programmes and units; costs of textbooks, materials, uniforms, cost of maintenance, etc; and opportunity cost (foregone earnings).

Scope and methodology

The study entailed analysis of the problems and issues relating to equity, quality and cost at two levels namely, the national level and the institutional level (case studies of two institutions) followed by a third phase which described and analysed policies and programmes on equity, quality and cost. The final section summarized conclusions and made recommendations.

The study was limited to higher learning institutions i.e. universities, colleges and equivalent institutions providing courses leading to the award of a degree (including undergraduate, masters' and doctoral degrees) both of a professional and a general nature and non-degree programmes leading to diplomas and/or certificates at the post-secondary level.

System-level data were collected for a period of five to ten years to provide a comprehensive description of trends in enrolment, resources, and costs by referring to available statistical information. Institutional data were collected through case studies based on two selected institutions, the Seoul National University and the Yonsei University. Data in respect of these institutions covered a period of not more than three years. Except for case study components, the study relied mainly on secondary sources of data.

In view of the differences in the quantity and quality of data that were available, statistical methods had to be used selectively and data presented in various ways. The nature of the questions usually suggested the mode of analysis. However, in general terms, the global part of the study required an analysis in both quantitative and qualitative terms. The part focusing on institutions via case study methods, although using statistical data, relied on ethnographic methods as well.

Chapter Three

SITUATIONAL ANALYSIS AT NATIONAL LEVEL

Historical overview

The origins of the higher education system in Korea can be traced to the period of the Three Kingdoms, i.e. Sylla, Kokuryo, and Backje. In 372, the "Taehak" or Great School, which marks the beginning of higher education in Korea, was established by the Kokuryo Dynasty. Sylla founded the first national college, which was called "Kookhak", in 682. In 992, during the succeeding Koryo Dynasty (918-1392), a new institution of higher learning, "Kukjagam", was established. Six years after the birth of the Yi Dynasty (1392 to 1910), Kukjagam was replaced by Sunggyungwan.

With the massive influx of Western civilization at the turn of the twentieth century, higher education, which had been confined to only a priviledged few, became more accessible. This change was followed by the establishment of various types of higher education institutions. It was largely Christian missionaries, nationalists and the government who took the lead in the setting up of these institutions.

The first group of higher education institutions was established by Christian missionary foundations and the missionary institutions played a key role in the enlightenment period. Next came the institutions founded by the government. The private institutions of higher education established to promote nationalistic education came later and were altogether less powerful than their predecessors. With the Japanese invasion however, the private schools founded by missionaries took on a nationalistic character.

When Japan colonized Korea between 1910 and 1945, it tightened its grip on the private institutions as part of its effort to establish a colonial educational system. During this period, some changes took place in higher education. First, the Japanese government founded Kyungsung Imperial College in 1926, the first state college ever established in Korea. The college was intended for the Japanese as reflected in its enrolment where the ratio of Japanese to Koreans was approximately 3:1. Secondly, the number of professional schools stood at twenty as of 1943, an increase of fifteen from five schools. Thirdly, higher education institutions were modified in such a way as to meet the mobilization needs of a war rather than to serve their original function of education by their actions taken at the end of 1943. And finally, the Japanese contrived to produce educators that would best serve its colonial education by reorganizing teacher education.

Liberation from Japanese rule in 1945 was followed by military rule by the United States of America, which lasted for three years, 1945-1948. During this military rule, there was a fundamental change in educational policies and, with the introduction of democratic philosophy and political culture, higher education marked a major turning point for new development. Higher education institutions, which had thus far been divided into colleges and professional schools, were reorganized into four-year colleges with medical schools requiring six years for graduation. It was also conceived that general colleges establish a graduate course with more than one-year education period. Seoul National University was founded in 1946 as a comprehensive national university with nine colleges and a graduate school. The Board of Trustees was responsible for the operation of the university. In addition to the national university, three private universities including Korea University, Ewha Womans University and Yonsei University were also accredited during this period. By 1948 there were 42 institutions of higher education; four universities, 23 independent colleges, four junior colleges and 11 miscellaneous schools. During this period, top administrators of higher education institutions formed a council to discuss ways to improve higher education management and to make autonomous decisions on matters of common interest.

The Korean War, which broke out in 1950, played havoc with higher education institutions, and most institutions were forced to close. However, the Korean government established the Wartime Union Colleges in 1951 in major provincial cities such as Busan, Kwangju, Chonju and Daejeon to continue higher education. Those wartime colleges heralded the birth of national colleges and universities in provincial areas at a later date, thus serving to expand higher education opportunities for those residing in local areas. As of 1954, there were 13 comprehensive universities, 31 colleges, seven junior colleges and 15 miscellaneous schools.

In an effort to promote qualitative improvement in higher education, a law governing the establishment criteria of colleges and universities was promulgated in the form of an ordinance. The endeavor to improve the quality of higher education also included the stipulation of the faculty assignment criteria and the university investigation committee to deliberate on the suitability of the criteria. In 1959, the number of higher education institutions increased to 80; 18 comprehensive universities, 33 colleges, ten junior colleges and 19 miscellaneous schools. Especially noteworthy is the fact that a doctoral course was set up at Seoul National University in 1957 for the first time in Korea. The establishment of this doctoral programme was followed by that of a professional graduate school in 1959, which marked the beginning of dual graduate school system.

During the Third Republic, there was a change in the structure of higher education. In 1962, the status of high schools for teachers, which had thus far produced elementary school teachers, was upgraded to that of a two-year junior colleges. In addition, higher education institutions which had existed in the forms of junior colleges, vocational higher professional schools and professional schools were reorganized into junior colleges.

In 1971 when an education reform committee was formed, efforts were exerted to reform higher education. The educational reform projects were professionally planned and well executed, and avoided resorting solely to legislation for the reform. In the mean time, the establishment of Korea Air and Correspondence University has expanded opportunities for higher education.

The current higher education system in Korea has been heavily influenced by the educational reform efforts initiated since the 1970s. As of 1985, institutions of higher education numbered 463; 127 two-year higher education institutions including junior colleges, the Korea Air and Correspondence University and open colleges, 135 four-year institutions offering bachelor's degrees (Korea Air and Correspondence University and open colleges not included), and 201 colleges and universities with master's and doctoral programmes. (see Table 3.1).

Table 3.1 Overview of higher education institutions

	Junior colleges	*Air and Corresponence colleges.*	*Open college*	*Miscellaneous schools*	*Teacher's colleges*	*Colleges and universities*	*Graduate schools*	*Total*
Schools	120	1	6	24	11	100	201	463
Duration of Study	2	2	2	–	–	–	–	–
Bachelors	–	5	4	4	4	4 (6)	–	–
Masters & Doctors	–	–	–	–	–	–	2 (3)	–
Instructional Staff	6,406	NA[1)]	NA[2)]	407	623	26,047	412	33,895
Enrolment	242,114	153,215	24,719	17,475	18,174	931,884	68,178	1,455,759 (70.87)
Male (%)	154,991 (64.02)	90,531 (59.09)	22,234 (89.95)	13,169 (75.36)	13,274 (74.04)	681,796 (73.17)	55,726 (81.74)	1,031,721 (29.03)
Female (%)	87,123 (35.98)	62,684 (40.01)	2,485 (10.05)	4,306 (24.64)	4,900 (25.96)	250,088 (26.83)	12,452 (18.26)	424,038

NA[1)] Air and Correspondence college has its own full-time teaching staff, but teaching staff of local institutions of higher education are appointed to give classroom lectures to students in the local areas concerned.

NA[2)] Data not available

Source: The Ministry of Education, *Statistical Yearbook of Education*, 1985.

Equity of higher education

Access to opportunities for higher education

A. Entrance examination: The system of entrance examination to colleges and universities in Korea has undergone several changes. The frequent changes may be ascribed, among other things, to the unusually high degree of interest in and enthusiasm for higher education on the part of the Korean people. Since 1985, colleges and universities have selected their freshman students on the basis of the composite score of the Scholastic Achievement Examination for College Entrance (some 65 per cent of the total), academic performance in high school (some 25 per cent), and the Essay Test administered by the college or university (some 10 per cent).

In 1980, the government announced a higher education reform plan. Under the plan, the written examinations conducted by individual colleges and universities were abolished and the so-called graduation quota system was implemented. The plan aimed at the normalization of secondary education by prohibiting the then wide-scale practice of extra-curricular private tutoring. The following factors have combined to help implement the graduation quota system.

First, there was a rapid increase in the number of college aspirants. For instance, college aspirants, which numbered some 120 thousand in 1970, increased to approximately 500 thousand in 1980. As a result, it was inevitable that a sizeable proportion of college-bound high school graduates failed in the examination and this situation in turn brought about the accumulation of repeaters. As the bottleneck of colleges and universities got narrower and narrower, college aspirants resorted to private tutoring as an added guarantee to higher education, thus adversely affecting secondary school education. Under these circumstances it was asserted that the expansion of opportunities for access to higher education was inevitable to alleviate the problem of repeaters.

Secondly, colleges and universities were incapable of controlling their qualitative level on an autonomous basis. It was argued that their stereotyped attitude whereby admission automatically leads to graduation was not conducive to the promotion of a favourable academic environment.

As has been examined thus far, the objectives of the graduation quota system can be summed up as follows; qualitative improvement of colleges and universities, expansion of higher education opportunities, promotion of academic atmosphere, and the development of higher education to the level that suits the current competitive world.

With the implementation of the graduation quota system, the Ministry of Education, which makes decisions on student quotas, has sharply increased the graduation quota of individual colleges and universities. Under the system, colleges and universities were allowed to accept 30 per cent more than their graduation quotas. In the meantime, the institutions of higher education adopted the full-time schooling system to make the most of the existing educational facilities and staff.

Though the system has had the advantage of expanding higher education opportunities, the sudden quantitative expansion of higher education population has tended to adversely affect the qualitative aspect of higher education. This is because the implementation of the system was not accompanied by corresponding faculty recruitment and augmentation of facilities.

Table 3.2 shows the increase trend in applicants and entrants to institutions of higher education. The percentage ratio of successful candidates shows a considerable increase from 43.9 per cent in 1975 to 51.7 per cent in 1980 and 60.9 per cent in 1985. The comparable figure of the Air and Correspondence College also shows an increase of more than 10 per cent from 30.5 per cent in 1975 to 41.6 per cent in 1985. As for teachers' colleges and regular colleges and universities, the ratio declined in 1980 compared with 1975, but it began to show an upward trend in 1985. The ratio of the graduate school has shown a gradual decline since 1975 at both master's and doctoral courses.

As illustrated in Table 3.2, junior colleges recorded a thirty-seven-fold increase in the number of applicants for admission in 1985 compared with 1975. The comparable figures for teachers' colleges, regular colleges and universities, master's courses, and doctoral courses are 1.2, 3.5, 6.5, and 8.4 respectively. In freshman quotas, junior colleges, Air and Correspondence College, teachers' colleges, regular colleges and universities, master's courses, and doctoral

Table 3.2 Increase in applicants and entrants by year (1975, 1980, 1985)

		Junior colleges	*Air & Correspondence college*	*Open colleges*	*Miscellaneous school*	*Teachers' colleges*	*Colleges university*	*Graduate school Master's course*	*Doctoral course*
1975	Applicants for admission (A)	4,842	39,374	–	–	7,273	144,330	10,113	1,068
	Entrants (B)	2,127	12,000	–	–	3,435	51,920	6,070	681
	B/A (%)	43.9	30.5	–	–	47.2	35.9	60.0	64.3
1980	Applicants (A)	155,964	57,960 (4,500)	–	–	18,391	397,343	32,186	3,018
	Entrants (B)	80,620	NA	–	–	4,622	115,755	15,310	1,751
	B/A (%)	51.7	NA	–	–	25.1	29.1	47.6	58.2
1985	Applicants (A)	178,125	81,829	10,111	10,028	8,999	511,810	65,756	8,994
	Entrants (B)	108,483	34,000	5,351	5,189	3,223	201,934	25,790	3,591
	B/A (%)	60.9	41.6	52.9	51.7	35.8	39.5	39.2	39.9
	Increase index of A (1975=100)								
	1980	3,221	–	–	–	252	274	318	282
	1985	3,678	–	–	–	123	353	650	842
	Increase Index of B (1975-100)								
	1980	3,790	–	–	–	134	222	252	255
	1985	5,100	283	–	–	93	388	424	522

* The figures in parentheses are the number of entrants specially selected. It is unclear if the number in parentheses is included in the total.

courses showed an increase of 51, 2.8, 0.9, 3.9, 4.2, and 5.2 times repectively during the same period.

To sum up, the freshman quotas for institutions of higher education have recorded a substantial increase in the last ten years except for teachers' colleges. The rapid growth in student enrolment quotas is mainly due to two factors; the increased need for highly educated manpower as a result of the economic boom of the 1970s and the implementation of the graduation system in 1980.

However, this type of largescale expansion in freshman enrolment fails to meet the social demands of the people. Koreans have a strong preference for four-year institutions of higher education over two-year ones. It is also noteworthy that the advancement to graduate schools among college graduates is on the steady increase. The growth in graduate school enrolment is directly related to the recent business slump, which leaves many college graduates unemployed. A considerable segment of the unemployed college graduates apply for admission to graduate schools.

Meanwhile, the upgrading of the Air and Correspondence college, which is intended to provide higher education opportunities for those industrial workers who have completed or interrupted school education, from a two-year institution to a five-year institution of higher education and the establishment of open colleges with four-year curricula have made a great contribution to the expansion of higher education opportunities.

It is a general practice that colleges and universities admit their students on the basis of their academic ability. Affected by redemptive philosophy, however, advantages have been given to some special groups.

First, there was a special admission policy under which colleges and universities were obliged to reserve ten per cent of their admission quotas of departments of engineering and business administration for those who have graduated from vocational senior high schools. Under the policy, the graduates of vocational schools were allowed to enter the institutions of higher education majoring in the same vocational field as they did in high school free of entrance examination within the ten per cent limit of freshman enrolment. This system of special admissions has been abolished because of the difficulties arising from having to admit even those who were not academically prepared to study fundamental subjects in college.

Secondly, in the case of the Air and Correspondence college and open colleges, admission depends solely on academic performance in high school; applicants need not take the Scholastic Achievement Examination for College Entrance. These types of higher education institutions have contributed to the expansion of opportunities for higher education for industrial workers by conducting classroom lectures in the evening or during vacation seasons.

Thirdly, teachers' colleges give special benefits to male applicants when selecting their freshman students. The benefits are designed to prevent the situation where the elementary and secondary school teaching profession, which is popular among female students, is predominated by female teachers. Under the policy, a certain portion of freshman admission quotas is set aside for male students. This policy, however, poses a problem in terms of equity in higher education.

B. Tuition fees and scholarships: Tuition fees and scholarships are variables of considerable importance to those who wish to obtain higher education but who possess insufficient financial resources. The tuition fees of national institutions is determined by the Ministry of Education in consultation with the Economic Planning Board. In the case of private colleges and universities, the Ministry of Education set the ceiling for tuition fees. Article 2 of the regulations governing tuition and admission fees stipulates that the Minister of Education decide the fees of national colleges and universities in due consideration of the circumstances of individual institutions and the changes in the economic situation. Regarding the fees of private institutions, it stipulates that the head of an institution decide the level of the fees with due regard to the circumstances of the institution concerned.

The tuition fees of national and public institutions of higher education are lower than those of private ones. By type of institution, regular colleges and universities charge more tuition fees than junior colleges. Teachers' colleges charge the lowest tuition fees. By field of study, those who are majoring in natural sciences generally pay a little more for tuition than humanities majors. Table 3.3 shows the tuition fees for each type of institution in 1985.

Table 3.3 Tuition fees of higher education institutions by type of institution (1985)

(unit won)

Classification		Junior colleges		Teachers' colleges	Colleges and universities				Open colleges	Korea Air & Correspondence college
					Humanities		Natural sciences			
		National & Public	Private	National	National	Private	National	Private		
Freshman	Max.	587,000	783,000	445,000	868,000	1,229,000	973,000	1,232,000		
	Min.	–	–	445,000	825,000	1,151,000	930,000	1,192,000		
Students enrolled	Max.	528,000	718,000	415,000	788,000	1,146,000	893,000	1,148,000		
	Min.	–	–	317,000	745,000	1,000,000	850,000	1,048,000		
Registration fees	Max.	50,000	65,000	–	80,000	90,000	80,000	90,000	10,000	3,000
	Min.	–	–	–	80,000	84,000	80,000	84,000		
Tuition fees	Max.	123,000	485,000	–	321,000	818,000	321,000	841,000	2,060 won per credit	12,400
	Min.	–	–	–	278,000	648,000	278,000	672,000		
Dues for School supporting organizations	Max.	391,000	219,000	430,000	467,000	414,000	572,000	431,000	–	–
	Min.	–	–	356,000	467,000	300,000	572,000	300,000	–	–
Expenses for students' defense corps	Max.	14,000	14,000	15,000	–	–	–	–	–	–
	Min.	–	–	15,000	–	–	–	–	–	–

Note: College and universities

1. Because maximum and minimum amounts of collection fees differ in every item, details may not add to "Total"
2. Expenditure for students' defense corps is excluded in the total amount of the fees of private institutions.
3. Private colleges apply correspondingly to the standard amount collected form the universities.

The fees comprise admission fees, tuition fees, dues for school supporting organizations and expenses for self-governing bodies. Tuition fees constitute the major part of the fees at private institutions whereas dues for school supporting organizations form the majority of the fees of national institutions of higher education. As for admission fees, private colleges and universities charge a little more than national institutions. In the case of tuition fees, private institutions charge more than twice those of national institutions. On the contrary, national colleges and universities collect 1.4 times the dues for school supporting organizations than private institutions. There is little difference in expenditure for self-governing bodies between national and private institutions.

The comparison between overall tuition fees and the per capita cost of education shows that there is a substantial differential in the rate of return among study fields. According to a research study, the rate of return in humanities and social sciences is relatively lower than that in natural sciences, medical science and pharmacy. In other words, those who major in natural sciences benefit more than humanities and social sciences majors.

Table 3.4 Per capita cost of education by type of institution and establishment

Type and establishment	*Total cost*	*Direct cost*			*Indirect cost (opportunity cost)*
		Total	*Public cost*	*Private cost*	
Junior colleges	2,253.9	1,659.4	855.7	803.7	594.5
National and Public	2,849.1	2,254.6	1,323.9	930.7	594.5
Private	2,191.5	1,597.0	806.6	790.4	594.5
Colleges and Universities	2,960.2	2,082.0	1,216.5	865.5	878.2
National and Public	2,855.2	1,977.0	1,250.7	726.3	878.2
Private	3,000.1	2,121.9	1,203.9	918.3	878.2

Source: Eun-bae Kong, *Size of Education Investment and Earning Rate*, Seoul: KEDI, 1985.

Table 3.4 gives an analysis of public and private costs of education by type of institution and establishment. As shown in the table, the differential between public and private costs of education amounts to some 50,000 won* in favor of public cost in the case of junior colleges whereas the comparable figure at colleges and universities stands at some 350,000 won. To compare costs of education by establishment, private fees of national institutions are higher than those of private institutions at the junior college level while the opposite is true at the college and university level.

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* Approximately 740 Korean won = One United States dollar.

In cases where there is one junior college student in a family, the total monthly cost of education borne by the family amounts to 138,283 won, which accounts for some 22.8 per cent of the total household earnings. And a family with a student at a college or university bears the educational burden of 173,500 won a month. This amount represents some 28.6 per cent of the total monthly income of an average family. Given this, expenditure on higher education places a heavy financial burden on many households.

Both to alleviate the financial burden of households and to provide higher education opportunities for students from economically unfavored sectors, it is required that scholarships be further expanded.

With the abolition of private tutoring in 1980 and the drastic increase in the higher education population, the need for expanded scholarship programmes, especially for those who are from economically disadvantaged families, has become more acute. To help meet the need, institutions of higher education were obligated to set aside 30 per cent of their tuition fee revenues for scholarships in 1980, when the graduation quota system was implemented. Later, the percentage ratio was downwardly adjusted due to the financial constraints of higher education institutions.

According to the Ministry of Education decree governing tuition and admission fees, national institutions of higher education are required to grant scholarships within 30 per cent of their admission and tuition fee revenues and within the range of 10-30 per cent of dues for school supporting organizations. In the case of private ones, it is stipulated that they set aside as scholarship funds from 8 to 20 per cent of their tuition fee revenues and dues for school supporting organizations. It further stipulates that students specializing in natural sciences and engineering and technology must constitute more than 70 per cent of the total financial aid recipients. The financial assistance, which usually takes the form of scholarship and tuition exemption is tenable for the entire schooling or research

Table 3.5 Financial aid recipients by year and type of institution

Classification	*Scholarship*			*Tuition exemption*			*Total*		
	1975	*1980*	*1985*	*1975*	*1980*	*1985*	*1975*	*1980*	*1985*
Junior colleges	106 (100.0)	3,573 (3,370.8)	7,856 (7,411.3)	1,489 (100.0)	22,588 (1,517.0)	83,240 (5,590.3)	1,595 (100.0)	26,161 (1,640.2)	91,096 (5,711.3)
Miscellaneous schools	60 (100.0)	259 (431.7)	413 (688.3)	444 (100.0)	863 (194.4)	4,701 (1,058.8)	504 (100.0)	1,122 (222.6)	5,114 (1,014.7)
Teachers' colleges	2,409 (100.0)	4,329 (179.7)	5,186 (215.3)	818 (100.0)	571 (69.8)	2,422 (296.1)	3,227 (100.0)	4,900 (151.8)	7,608 (235.8)
Colleges and universities	7,924 (100.0)	25,973 (327.8)	36,995 (466.9)	75,183 (100.0)	130,729 (173.9)	405,192 (538.9)	84,869 (100.0)	156,702 (184.6)	442,187 (521.0)

period. The aid may be suspended, however, in case the recipient is academically poor or is mentally or physically incapable of carrying out study further.

Table 3.5 shows the number of financial aid recipients at higher education level. In general, scholarships are provided by the government, private organizations and idividuals. And the tuition exemption takes the form of a full or partial exemption of tuition fees, dues for school supporting organizations and admission fees. The rate of increase in scholarship was higher during the period 1975-1980 than the period 1980-1985 whereas the beneficiaries of tuition exemption increased more during 1980-1985. The rapid increase in the number of students exempted from tuition fees has expanded the number of financial aid recipients.

Table 3.6 shows that the financial assistance recipients of junior colleges, teachers' colleges, and colleges and universities have increased by one per cent, four per cent, and seven per cent respectively from 1975 to 1985. By sex, a larger proportion of female students are granted financial aid than their male counterparts in institutions of higher education except for teachers' colleges. It seems that granting more financial assistance to male students at teachers' colleges has been brought about by a policy consideration to attract more male students to the institutions.

Table 3.6 Percentage ratio of financial aid recipients by sex

Classification		*Junior colleges*	*Miscellaneous schools*	*Teachers' colleges*	*Colleges and Universities*
1975	Total	36.6	16.8	37.9	40.6
	Male	17.7	17.3	41.0	41.5
	Female	45.8	15.7	35.7	38.1
1980	Total	37.6	16.2	41.9	47.5
	Male	34.3	5.9	65.9	43.5
	Female	43.6	47.7	32.9	58.1

As has been studied thus far, policies regarding the entrance examination, tuition fees and scholarships have exerted influence over the access to opportunities for higher education. The Korean entrance examination system is structured in such a way as to admit students to institutions of higher education based on academic ability. A distinctive feature of the examination system in relation to equity is its way of reflecting applicant's academic performance in high school in the selection process. The system regards all high schools in the nation as equal in quality, even though it is generally agreed that the high schools in cities maintain higher academic standards than those in rural areas. As a result, graduates of high schools in the rural areas hold an advantage over those from urban high schools.

As for tuition fees, national institutions of higher education are less expensive than private ones. This leads to a situation where a student at a national institution pays less than his counterpart in a private school. In the meantime, recipients of financial aid are determined on the basis of the academic standard and the economic ability of an applicant.

To sum up, the admission system and the policies on tuition fees and scholarships are so structured that they give preference to students from rural areas. For example, in case an economically underprivileged student from rural area applies for admission to a national institution, he will enjoy substantial benefits.

Status of equity in higher education: Equity in higher education is a basic goal to be realized in democratic society which insists on equal educational opportunities. The equal educational opportunity is designed to guarantee the right to educational benefits regardless of sex, region, social class and economic conditions. In our rapidly changing society, the question of equity in education is now felt much more keenly than ever before. Under such circumstances, problems derived from industrialization, differences between the city and the country and the gap between social strata come to the force. These matters are closely connected with education.

The present situation of distribution of students in higher education institutions is shown in Table 3.7. As shown in the table, about 78 per cent accounts for four-year colleges, 17 per cent for two-year colleges and 4.5 per cent for graduate schools. About 64 per cent of students are enrolled in colleges and universities, which take up the greater proportion of higher education.

Table 3.7 Student distribution by type of institution

Classification	*Type of institution*	*Student enrolment*	*Percentage ratio*
Two-year institutions	Junior colleges	242,114	16.63
Four-year institutions	Air & Correspondence college	153,215	10.52
	Open colleges	24,719	1.70
	Miscellaneous schools	17,475	1.20
	Teachers' colleges	18,174	1.25
	Colleges & universities	931,884	64.01
Graduate schools	Master's degree course	57,698	3.96
	Doctor's degree course	10,480	0.72

The detailed classification of this distribution according to each study field is shown in Table 3.8. Colleges and universities, graduate schools and junior colleges embrace all fields of study while the Air and Correspondence college, open colleges, teachers' colleges and other miscellaneous schools have particular disciplines available.

In the case of colleges and universities, social sciences account for 27.7 per cent, engineering for 21.4 per cent, language and literature for 12.7 per cent and the teaching profession for 10.2 per cent, which clearly shows that these four fields form the main body of Korean higher education. In the case of junior colleges, engineering accounts for 40.4 per cent and social sciences for 18.2 per cent. In the master's course, social sciences account for 31.4 per cent, engineering for 15.3 per cent and the teaching profession for 20.6 per cent. In the doctoral course, however, medical and pharmaceutical fields account for 22.2 per cent, social sciences for 19.2 per cent, engineering for 16.3 per cent, physical science for 13.6 per cent and language and literature for 12.7 per cent.

The Air and Correspondence college takes up 44.3 per cent of social sciences, 16.5 per cent of language and literature, 15.2 per cent of teacher training and 10.2 per cent of physical science; while the open colleges have 78.7 per cent in the engineering field and 18.3 per cent in social science field. In the case of miscellaneous schools, humanities accounts for 35.3 per cent, social sciences for 22.0 per cent, physical education for 16.9 per cent and arts for 10.6 per cent.

Table 3.8 Student distribution by study field (1985)

Classification	*Junior colleges*	*Air & correspondence colleges*	*Open colleges*	*Miscellaneous schools*	*Teachers' colleges*	*Colleges and universities*	*Graduate Schools*	
							Master's degree course	*Doctor's degree course*
Total	242,114 (100)	153,215 (100)	24,719 (100)	17,475 (100)	18,174 (100)	931,884 (100)	57,698 (100)	10,480 (100)
Linguistics and literature	4,779 (2.0)	25,230 (16.5)	– (–)	1,125 (6.4)	– (–)	118,048 (12.7)	3,266 (5.7)	1,335 (12.7)
Humanities	– (–)	– (–)	– (–)	6,168 (35.3)	– (–)	32,093 (3.4)	2,925 (5.1)	575 (5.5)
Social sciences	44,164 (18.2)	67,803 (44.3)	4,524 (18.3)	3,840 (22.0)	– (–)	257,738 (27.7)	18,137 (31.4)	2,015 (19.2)
Natural sciences	10,926 (4.5)	15,568 (10.2)	– (–)	80 (0.5)	– (–)	89,709 (9.6)	3,805 (6.6)	1,424 (13.6)
Engineering	97,799 (40.4)	7,708 (5.0)	19,454 (78.7)	– (–)	– (–)	199,603 (21.4)	8,822 (15.3)	1,712 (16.3)
Agriculture and Forestry	12,404 (5.1)	13,663 (8.9)	– (–)	– (–)	– (–)	41,135 (4.4)	1,448 (2.5)	581 (5.5)
Fishery and Marine	6,904 (2.9)	– (–)	– (–)	– (–)	– (–)	6,177 (0.7)	208 (0.4)	55 (0.5)
Arts	17,145 (7.1)	– (–)	– (–)	1,856 (10.6)	– (–)	43,139 (4.6)	2,720 (4.7)	18 (0.2)
Physical	1,561 (0.6)	– (–)	– (–)	2,947 (16.9)	– (–)	10,038 (1.1)	561 (9.7)	78 (0.7)
Medical science and pharmacy	31,974 (1.6)	– (–)	– (–)	– (–)	– (–)	39,408 (4.2)	3,950 (6.8)	2,325 (22.2)
Teaching profession	14,438 (6.0)	23,243 (15.2)	371 (1.5)	1,459 (8.3)	18,174 (100)	94,796 (10.2)	11,858 (20.6)	362 (3.5)

Source: The Ministry of Education, *Statistical Yearbook of Education*, 1985.

Note: The figures in parenthesis represent percentage ratio.

The general distribution of study fields in higher education can be roughly divided into two major areas, namely social sciences and engineering.

Table 3.9 which analyses students enrolled in higher education institutions by establishment region, sex, age and parents' social status will be helpful to assess the validity of the concept of equity in higher education.

Sixty-seven per cent of all students attending higher education institutions are enrolled in private schools; 90.5 per cent in junior colleges, 49.3 per cent in four-year open colleges, 73.9 per cent in colleges and universities, 71.6 per cent in graduate schools and 100 in miscellaneous schools. The Air and Correspondence college and teachers' colleges are founded by the nation. As seen in Table 3.9, higher education mostly relies on private schools.

In terms of region, 31.1 per cent of the school-going population attend schools in Seoul. The total population as of 1985 reached 40,467,000, while the population of Seoul in the same year was 9,646,000 accounting for 23.8 per cent of the total population. Thus it can be concluded that, per capita, more students attend schools in Seoul.

Table 3.10 shows the ratio of female students according to the type of institution in the years 1975, 1980 and 1985. On the whole, the ratio of female students was 27.3 per cent in 1975, 24.1 per cent in 1980 and 29.7 per cent in 1985.

In 1975, the ratio of female students in teachers' colleges and junior colleges was higher than other schools in the nation. In 1980, the ratio in junior colleges, teachers' colleges and miscellaneous schools was high compared with other schools all over the nation. The ratio in 1985 was high in junior colleges, the Air and Correspondence college and teachers' colleges. Particularly in graduate schools, the ratio is on the increase; 16.4 per cent in 1975, 17.0 per cent in 1980 and 18.3 per cent in 1985.

To conclude, the ratio of female students in junior colleges, teachers' colleges and adult educational programmes is relatively high.

Table 3.9 Student distribution by establishment, region, sex, and age (1985)

Classification		*Junior colleges*	*Air & Correspondence college*	*Open college*	*Miscellaneous schools*	*Teachers' colleges*	*Colleges and universities*	*Graduate schools*	*Total*
Total		242,114	153,215	24,719	17,475	18,174	931,884	68,178	1,455,759
Establishment	National	22,902 (9.5)	153,215 (100)	12,533 (50.7)	–	18,174 (100)	238,343 (25.6)	19,155 (28.1)	476,508 (32.7)
	Public	54 (0.02)	–	–	–	–	5,035 (0.5)	207 (0.3)	5,296 (0.4)
	Private	219,158 (90.5)	–	12,186 (49.3)	17,475 (100)	–	688,506 (73.9)	48,816 (71.6)	973,955 (66.9)
Region	Seoul	30,941 (12.8)	53,616 (35.0)	8,901 (36.0)	2,311 (13.2)	3,013 (16.6)	308,763 (33.1)	44,525 (65.3)	452,078 (31.1)
	Provincial	211,173 (87.2)	99,590 (65)	15,818 (64.0)	15,164 (86.8)	15,161 (83.4)	623,121 (66.9)	23,653 (34.7)	1,003,689 (68.9)
Sex	Male	154,991 (64.0)	90,531 (59.8)	22,234 (89.9)	13,169 (75.4)	4,927 (27.1)	681,796 (73.2)	55,726 (81.6)	1,023,374 (70.3)
	Female	87,123 (36.0)	62,684 (40.9)	2,485 (10.1)	4,306 (24.6)	13,247 (72.9)	250,088 (26.8)	12,452 (18.3)	432,385 (29.7)
Age (%)	20 and below	63.1	5.5	14.5	22.5	45.8	41.6	–	
	20-25	34.2	32.6	43.1	41.4	37.7	53.3	36.7	
	26 and above	2.8	63.0	42.4	22.5	16.9	5.1	63.3	

Source: The Ministry of Education, *Statistical Yearbook of Education*, 1985.

Note: The statistics in the age column of the Air and Correspondance college are estimated figures.

Table 3.10 Number of female students by year (1975, 1980, 1985)

Classification		*Junior colleges*	*Air & Correspondence college*	*Open colleges*	*Miscellaneous schools*	*Teachers' colleges*	*College and universities*	*Graduate schools*	*Total*
	Total enrolment	4,355	–	–	2,993	8,504	208,986	13,870	234,932
1975	Female students	2,927	–	–	817	4,733	55,439	2,278	64,042
	Female ratio	67.0	–	–	27.3	58.0	26.5	16.4	27.3
	Total enrolment	151,199	(32,053)	–	4,058	9,425	402,979	33,939	601,600
1980	Female students	39,883	–	–	1,209	7,723	90,634	5,786	145,235
	Female ratio	26.4	–	–	29.8	81.9	22.5	17.0	24.1
	Total enrolment	242,114	153,215	24,719	17,475	18,174	931,884	68,178	1,455,759
1985	Female students	87,123	62,684	2,485	4,306	13,247	250,088	12,452	432,385
	Female ratio	36.0	40.9	10.1	24.6	72.9	26.8	18.3	29.7

Source: The Ministry of Education, *Statistical Yearbook of Education*, 1975, 1980, 1985.

In terms of the student distribution by age, junior colleges have the highest percentage of students aged below 20. This seems to have to do with the fact they are two-year institutions. The category of students over 20 is most concentrated in the Air and Correspondence college and open colleges, 63.9 per cent in the Air and Correspondence college and 42.4 per cent in open colleges. This indicates that they are mainly institutions for working people. As colleges or universities are not equipped with a proper system for continuing fields like adult education, the distribution of students of normal university-going age is high; students below 25 account for 95 per cent.

As data to analyze the social and economic status of students' parents are not easy to obtain, only the case of the Seoul National University is presented here. A socioeconomic status can be measured by various methods, but the only data available here is the distribution of schooling of parents. Hence it must be noted that the analysis was made on this basis and it is advisable not to generalize the national trend in terms of the data.

Table 3.11 shows that the ratio of parents who received college or graduate school education is 42.5 per cent in 1980 and 43.7 per cent in 1985, and that the ratio of students whose parents have higher education academic backgrounds is increasing. On the other hand, the ratio of parents who received high school education or below is more than 56 per cent, which testifies that education plays an important role in upward social transition.

The number of foreign students in higher educational institutions of a country (Table 3.12) is said to be proportional to the degree of economic and academic development of the country. The number of foreign students is comparatively small. The statistics in 1985 showed 910.

The admission of foreign students depends on the autonomous decision of individual colleges. But foreigners can be qualified for admission only after they learn the Korean language at the language institute of the Seoul National University or other similar language institutes because Korean is the only language spoken in college.

Table 3.11 Number of students by guardian's school career at Seoul National University

Classification	*Academic year*						
	1980				*1985*		
	Number of students	*Percentage*		*Total Population*	*Number of students*	*Percentage*	
Number of students	14,640	100			23,771	100	
Graduate school graduates	591	4.0	42.5	8.9	1,510	6.36	43.73
Leave graduate school without graduation	40	0.3			134	0.56	
University graduates	5,213	35.6		18.7	8,284	34.85	
Leave university without graduation	385	2.6			466	1.96	
High school graduates	3,766	25.7			6,706	28.21	
Leave high school without graduation	104	0.7			110	0.46	
Middle school graduates	1,721	11.8		13.2	2,820	11.86	
Leave middle school without graduation	161	1.1			80	0.34	
Primary school graduates	1,819	12.4		34.5	2,948	12.40	
Leave primary school without graduation	43	0.3			149	0.63	
Uneducated	797	5.4		19.7	564	2.37	

Source: Seoul National University, *Statistical Yearbook of Seoul National University*, 1980, 1985

Table 3.12 shows the distribution of foreign students in terms of country; students from the Republic of China, the United States, and Japan in order of the number. In the true sense of the word, there are only a handful of foreign students because most Chinese students are Chinese residents in Korea while many American students are Koreans who emigrated to the United States.

Table 3.12 Number of foreign students registered (1985)

Classification	*Union colleges*	*Colleges and universities*	*Graduate schools*	*Total*
Total	13	705	192	910
Republic of China	11	427	73	511
U.S.A.	1	119	36	156
Japan	1	63	32	96
Others (41 nations)	0	96	51	147

The rapid economic growth since the 1970s has changed foreigners' view of Korea and as a result, the number of foreign students is expected to increase gradually. Scholarships are given to foreign students according to their Korean language ability but their tuition fee is the same as their Korean counterparts.

Realization of opportunities for higher education: The social demand for higher education differs depending on people's concept of opportunities for higher education. The entrance rate of applicants or the number of drop-outs in school or some other data may show this fact. Table 3.13 shows the present situation of the number of applicants and successful ones at different types of institutions. It is classified into fresh high school graduates and repeaters. The overall ratio of successful applicants is 61 per cent in junior colleges, 53 per cent in four-year open colleges, 52 per cent in miscellaneous schools and less than 40 per cent in colleges and universities. Thus it can be said that higher education is not sufficient to meet the demand.

In addition to that, the comparison between the ratio of successful repeaters and fresh high school graduates looks favourable to the latter. It is, however, an exception in the case of miscellaneous schools.

In particular, Korea can hardly satisfy the social demand for higher education in spite of educational policy changes such as the graduation quota system. The changed educational direction sought in such measures as steps for repeaters adopted in 1977 and restrictive measures on private tutoring implemented in 1980 will prove fruitless unless the wage difference between college graduates and

Table 3.13 Conditions of applicants and entrants by type of institution (1985)

Classification	*Air & Correspondence college*	*Open colleges*	*Miscellaneous schools*	*Teachers' colleges*	*Colleges and universities*	*Graduate schools*	
						Master's degree courses	*Doctor's degree courses*
Applicants (A)	81,829 (37,528)	10,111 (13,381)	10,028	8,999	511,810	65,756	8.0
Fresh graduates (A^1)	–	–	5,289	6,023	300,120	–	–
Re-examiners (A^2)	–	–	4,048	1,520	200,247	–	–
Others (A^3)	–	–	691	1,456	11,443	–	–
Entrants (B)	34,000 (30,100)	5,351 (5,360)	5,189	3,223	201,934	25,790	3.5
Fresh graduates (B^1)	–	–	2,549	2,642	125,116	–	–
Re-examiners (B^2)	–	–	2,248	523	73,143	–	–
Others (B^3)	–	–	392	58	3,675	–	–
B/A	41.6%	52.9%	51.7%	35.8%	39.5%	39.2%	43.75%
B^1/A^1	–	–	48.2%	43.9%	41.7%	–	–
B^2/A^2	–	–	55.5%	34.4%	36.5%	–	–
B^3/A^3	–	–	56.7%	4.0%	32.1%	–	–

Source: The Ministry of Education, *Statistical Yearbook of Education*, 1985.

Note: The figures in parenthesis refer to the number of students transferred in.

high school graduates is narrowed, or better treatment is given to high school graduates. Thus the importance of educational as well as social measures for education can never be overlooked.

The Gini coefficient on the Lorenz curve based on the data concerning the applicants for higher education and successful applicants in 1974 and 1979 stands at 0.0746 and 0.0513 respectively. The disparity decreased from 0.0746 to 0.0513 showing 68.77 per cent improvement toward perfect parity. As of 1979, however, 41.85 of applicants are alloted 50 per cent of the entrance quorum while 41.7 per cent of applicants are deprived of opportunities for higher education.

The present status of students who leave or change school, classified into a student on leave of absence, a student reinstated to school, a student removed from the school register, a student returned to the original register, a student transferred in, and a student transferred out to other schools, is shown in Table 3.14. The rate of a student on leave of absence is eight per cent in junior colleges and 11 per cent in colleges and universities, which is higher than that of teachers' colleges. In the case of a student reinstated to school, the rate is 4.4 per cent in junior colleges and seven per cent in colleges and universities. The percentage of students removed from the register is 6.87 per cent in junior colleges, 7.57 per cent in miscellaneous schools and 2.09 per cent in colleges and universities, which accounts for the preference for colleges and universities. The reason for the high rate of students on leave of absence is that many male students are on military service. The military service is sometimes used as a preventive measure for possible drop-outs due to the graduation quota system.

One of the primary reasons to receive higher education is to be qualified to select a job one wants. Therefore opportunities for higher education are directly linked with one's profession and to some degree with social status.

But it is also to be noted that job opportunities are influenced by many other factors. In the 1970s, the annual average economic growth rate was over ten per cent. As a result, the nation was faced with a shortage of highly-educated manpower. Accordingly, the government attempted to enlarge opportunities for higher education by establishing measures for repeaters in 1977 and the graduation

Table 3.14 Movement of students (1985)

Classification	*Junior colleges*	*Miscellaneous schools*	*Teachers' colleges*	*Colleges and universities*	*Graduate schools*	
					Master's degree course	*Doctor's degree course*
Number of students	**242,114 (100.00)**	**17,475 (100.00)**	**18,174 (100.00)**	**931,884 (100.00)**	**57,698 (100.00)**	**10,480 (100.00)**
Absentees for a semester or more	**19,500 (8.05)**	**2,061 (11.79)**	**145 (0.80)**	**105,051 (11.27)**	–	–
Reinstated to school	**10,652 (4.40)**	**876 (5.01)**	**108 (0.60)**	**64,771 (6.95)**	–	–
Removed from the register	**16,623 (6.87)**	**1,323 (7.57)**	**105 (0.58)**	**19,507 (2.09)**	**4,276 (7.41)**	**286 (2.73)**
Returned to the original register	**491 (0.20)**	**222 (1.27)**	**4 (0.02)**	**914 (0.10)**	–	–
Transferred in	**710 (0.29)**	**1,058 (6.05)**	**3,281 (18.15)**	**1,809 (0.19)**	–	–
Transferred out	**78 (0.03)**	**8 (0.05)**	**1 (0.01)**	**3 (0.00)**	–	–

Source: The Ministry of Education, *Statistical Yearbook of Education*, 1985.

Note: The numbers in parenthesis represent percentage ratio.

quota system in 1980. Unfortunately the global economic recession and unstable domestic business conditions since 1980 severely reduced the demand for highly educated manpower.

This decreased demand can be attributed to other factors. Those who entered expanded or newly established business firms, thanks to the vigorous economic development plan since the 1960s, were fresh from university and, assuming that their minimum retiring age is 55, most of them have ten more years to work because their average age was 45 as of 1985. Accordingly the decrease in the number of retirements dampens the demand for new college graduates. As seen, the international business recession, the sluggish domestic economic situation, the age structure of domestic businesses and other factors tend to slow down job opportunities.

The reality can be well understood by Table 3.15 which analyzes employment and other courses taken by graduates from different types of higher education institutions.

The rate of employment of college graduates in the country was 53.8 per cent in 1975, 58.8 per cent in 1980 and 43.6 per cent in 1985. Unemployment in 1980 was 9.3 per cent, which soared to 18.5 per cent in 1985.

The detailed classification is as follows. In case of junior colleges, the percentage decreased in 1980 but in 1985 it turned upward. The number of graduates employed was 400 or so in 1980 but it jumped up to 30,000 in 1985. It can be said that businesses have demanded skilled workers from two-year junior colleges rather than four-year college graduates since 1980. In addition, the rate of advancement to four-year institutions among junior college graduates, which stood at 46 per cent, dropped to less than ten per cent in 1985. This also seems to be related to the widened employment opportunities for junior college graduates.

In case of miscellaneous schools, the number of graduates is rather small but the rate of employment dropped from 53.2 per cent in 1975 to 50.0 per cent in 1980 and further to 46.2 per cent in 1985 while the rate of unemployment increased to 7.3 per cent.

The rate of employment among teachers' college is 11.2 per cent in 1975, increased to 94.4 per cent in 1980. This rapid increase resulted from a policy to cut down the class size per teacher as well

Table 3.15 Employment and general status of graduates (1975, 1980, 1985)

Classification		*Junior colleges*	*Miscellaneous schools*	*Teachers' colleges*	*Colleges and universities*	*Graduate schools*	*Total*
1975	Graduates	1,783	442	5,841	33,610	3,466	45,142
	Entrants to a school of higher grade	312 (17.5)	73 (16.5)	18 (0.3)	2,179 (6.5)	191 (5.5)	2,773 (6.1)
	Employed	820 (46.0)	235 (53.2)	653 (11.2)	19,635 (58.4)	2,951 (85.1)	24,294 (53.8)
	Enlisted in the military	41 (2.3)	40 (9.0)	1 (0.02)	4,076 (12.1)	36 (1.0)	4,194 (9.3)
	Unknown	421 (23.6)	82 (18.6)	2,290 (39.2)	4,639 (13.8)	143 (4.1)	7,575 (16.8)
	Unemployed	189 (10.6)	12 (2.7)	2,879 (49.3)	3,078 (9.2)	145 (4.2)	6,303 (14.0)
1980	Graduates	1,940	426	2,494	49,735	5,553	60,148
	Entrants to a school of higher grade	887 (45.7)	143 (33.6)	1 (0.04)	6,688 (12.2)	555 (10.0)	7,674 (12.8)
	Employed	408 (21.0)	213 (50.0)	2,354 (94.4)	28,349 (57.0)	4,042 (72.8)	35,366 (58.8)
	Enlisted in the military	67 (3.5)	9 (2.1)	1 (0.04)	4,796 (9.6)	233 (4.2)	5,106 (8.5)
	Unknown	212 (10.9)	53 (12.4)	– (–)	5,745 (11.6)	416 (7.5)	6,426 (10.7)
	Unemployed	366 (18.9)	8 (1.9)	138 (5.5)	4,757 (9.7)	307 (7.6)	5,576 (9.3)
1985	Graduates	73,927	2,079	2,252	118,584	18,637	214,879
	Entrants to a school of higher grade	6,991 (9.5)	530 (25.5)	24 (1.1)	12,278 (10.4)	1,535 (8.5)	21,358 (9.9)
	Employed	29,556 (40.0)	960 (46.2)	1,192 (52.9)	48,552 (40.9)	13,479 (74.7)	93,739 (43.6)
	Enlisted in the military	15,282 (20.7)	145 (7.0)	– (–)	13,163 (7.1)	918 (5.1)	29,508 (13.7)
	Unknown	11,063 (15.0)	292 (14.0)	868 (38.5)	17,150 (14.5)	1,154 (6.4)	30,527 (14.2)
	Unemployed	11,035 (14.9)	152 (7.3)	168 (7.5)	27,441 (23.1)	951 (5.3)	39,747 (18.5)

Note: The statistics are the ones as of April 1 of the years concerned.

as the entrance quoram itself. In 1985, however, the rate decreased to around 53 per cent due to low rate of teacher appointment among teachers' college graduates because of financial difficulties of the nation.

In case of colleges and universities, the rate dropped from 58.4 per cent in 1975, to 57.0 per cent in 1980 and further to 40.9 per cent in 1985 while the rate of unemployment increased to 23.1 per cent in 1985 from 9.7 per cent in 1980 and 9.2 per cent in 1975. As already mentioned, this phenomenon came from the decline of employment opportunities for college graduates owing to the changed economic situation and business structure. It should be noted here in particular that the number of college graduates, which amounted to 50,000 in 1980, has increased to 120,000. The number of graduates hired, which was 28,000 in 1980, rose to 49,000 in 1985. The number is similar to that of college graduates in 1980. This shows that an expansion of colleges and universities has taken place since 1980.

The number of graduate school graduates increase 3.5 times in 1985 compared with that in 1980. While the rate of employment was 85 per cent in 1975, it came down to 73 in 1980 and 75 per cent in 1985. But the absolute number of graduates employed has tripled, indicating the increasing demand for graduate school graduates.

Table 3.16 shows the distribution of occupations among graduates of various types of higher education institutions.

Overall, 93,739 graduates of higher education institutions were employed in 1985; 52 per cent in the professional and technical field, 8 per cent in the service sector, and 6 per cent in the administrative and managerial field. Junior college graduates were in a similar situation; while 20.3 per cent of college graduates were employed in clerical work and 44 per cent in the professional and technical field. 70 per cent of graduate school graduates were engaged in the professional and technical field and nine per cent in clerical work.

The route of employment is somewhat similar regardless of the type of educational institutions (Table 3.17). In case of junior colleges or teachers' colleges, 47 to 49 per cent of graduates were

Table 3.16 Employment of graduates by occupation (1985)

Classification	*Junior colleges*	*Miscellaneous schools*	*Teachers' colleges*	*Colleges and universities*	*Graduate schools*	*Total*
Graduates employed	29,556 (100.0)	960 (100.0)	1,192 (100.0)	48,552 (100.0)	13,479 (100.0)	93,739 (100.0)
Professional & technical workers	16,141 (54.6)	425 (44.3)	1,192 (100.0)	21,311 (43.9)	9,371 (69.5)	48,440 (51.7)
Administrative & managerial workers	1,477 (5.0)	15 (1.6)	–	3,298 (6.8)	788 (5.8)	5,578 (6.0)
Clerical workers	4,328 (14.6)	99 (10.3)	–	9,866 (20.3)	1,142 (8.5)	15,435 (16.5)
Sales workers	1,179 (4.0)	101 (10.5)	–	2,065 (4.3)	160 (1.2)	3,506 (3.7)
Service workers	2,382 (8.1)	198 (20.6)	–	3,858 (7.9)	640 (4.7)	7,078 (7.6)
Agriculture & Fishery workers	797 (2.7)	3 (0.3)	–	895 (1.8)	180 (1.3)	1,875 (2.0)
Production workers & drivers	1,512 (5.1)	6 (0.6)	–	1,429 (2.9)	124 (0.9)	3,071 (3.3)
Military servicemen	423 (1.4)	12 (1.3)	–	3,367 (6.9)	649 (4.8)	4,451 (4.7)
Others	1,317 (4.5)	101 (10.5)	–	2,462 (5.1)	425 (3.2)	4,305 (4.6)

Source: The Ministry of Education, *Statistical Yearbook of Education*, 1985.

employed through school recommendation to 22 per cent found jobs by taking exams. On the contrary, 34 per cent of college graduates found jobs through school recommendation and 45 per cent through exams which attests to individual ability.

In terms of linkage between major subject and field of employment, about 80 per cent of junior college graduates, 76 per cent of college graduates and 63 per cent from miscellaneous schools ended up in jobs related to their area of study.

Table 3.17 **Employment of graduates by field and media of employment (1985)**

Classification	*Junior colleges*	*Miscellaneous schools*	*Teachers' colleges*	*Colleges and universities*
By media of employment				
Total employment	29,556 (100.0)	960 (100.0)	1,192 (100.0)	48,552 (100.0)
School recommendation	13,890 (47.0)	310 (32.3)	584 (49.0)	16,339 (33.7)
Examination of employment	6,407 (21.7)	77 (8.0)	204 (17.1)	21,948 (45.2)
Private enterprise	2,780 (9.4)	277 (28.9)	–	3,005 (6.2)
Others	6,479 (21.9)	296 (30.8)	404 (33.9)	7,260 (15.0)
By field				
Specialised field	23,486 (79.5)	609 (63.4)	1,192 (100.0)	36,730 (75.7)
Unspecialized field	6,070 (20.5)	351 (36.6)	–	11,822 (24.3)

Source: The Ministry of Education, *Statistical Yearbook of Education*, 1985.

Quality of higher education

Determinants of quality in terms of inputs

A. Quality of faculty resources and promotion: To better select qualified faculty members, institutions of higher education have their own criteria for faculty appointment. However the criteria should meet the minimum faculty qualifications prescribed by law. The academic rank of faculty members is divided into (full) professor, associate professor, assistant professor, full-time instructor and teaching assistant.

In terms of academic rank, a faculty member of a four-year institution is regarded as being one level higher than the other holding the same rank at a two-year institution of higher education.

Table 3.18 Qualification requirements for faculty members

	College graduates and equivalent			*Graduates of two-year institution and equivalent*		
	Research achievement	*Teaching experiences*	*Total*	*Research achievement*	*Teaching experiences*	*Total*
College professor	4	6	10	5	8	13
Associate professor of college or professor of junior college	3	4	7	4	6	10
Assistant professor of college or Associate professor of junior college	2	2	4	3	4	7
Full-time instructor of college or Assistant professor of junior college	2	1	3	2	3	5
Full-time instructor of junior college	2	0	2	2	1	3
Teaching assistant	Those who graduated from an institution equivatent to or higher than the institution in grade where one will be employed.					

In other words, an associate professor of a four-year college or university is the same as a full professor of a two-year institution in academic rank. Likewise, an assistant professor or a full-time instructor of a four-year college is the same as an associate professor or an assistant professor of a two-year junior college respectively.

In the assessment of promotion to a higher rank, both research achievements and teaching experiences are taken into account. Even though it is stipulated that the periods of research and teaching are replaceable, it is a common practice that research activities in the past two years as well as teaching experiences are counted in consideration for promotion. When recruiting new faculty, most colleges and universities require master's degree as a minimum requirement for full-time instructor and doctor's degree for assistant professorship. Some institutions even include in the requirement the GPA average of above 3.00 at graduate school or that of above 3.00 in the third or fourth year of undergraduate school.

Table 3.19 shows the distribution of faculty members in terms of academic qualifications. Faculty members with a doctoral degree or above account for three per cent of the total full-time teaching staff in junior colleges, 16 per cent in miscellaneous schools, 9.5 per cent in teachers' colleges, 34 per cent in colleges and universities, and 73 per cent in graduate schools. It is noteworthy that faculty members with master's degree comprise the highest proportion.

Instructional staff are reappointed in accordance with the faculty reappointment system. Under the system, full-time instructors are reappointed every two years, assistant professors every three years, assistant professors every six years, and professors every ten years.

As for the minimum teaching experience required for promotion to a higher rank, it varies with each institution. Generally two years are required for promotion to the rank of assistant professor from full-time instructor, four years from assistant professor to associate professor and five years from associate professor to professor. Together with teaching experience, it is essential to fulfill research requirements to be promoted to a higher academic rank. Faculty members are required to submit at least two research papers written within the past two years as the minimum research requirement for promotion. Those who fail to be promoted to a higher academic rank within the prescribed period may remain at the same rank.

Quality of faculty resources affects the teaching-learning process in two respects. First, in view of the fact that the teacher plays the leading role in the planning, overall management and evaluation of lectures, it may not be too much to say that the quality of a faculty member is an important variable in determining the quality of teaching-learning activities. Secondly, individual characteristics of a teacher tend to be translated into the characteristics of his lectures through student-teacher interactivity. The characteristics have much to do with student's interest in class activities.

The ultimate philosophy of a university lies in the pursuit of excellence. In this regard, the ratio of teaching staff with doctor's degree may serve as the most objective index of excellence. It is true that there are few more objective indicators than a degree. In this context, it will be of value to study the distribution of faculty members by degrees awarded.

Table 3.19 Instructional staff by degree awarded

Classification	*Junior colleges*			*Miscellaneous schools*			*Teachers colleges*			*Colleges and universities*			*Graduate schools*		
	Male	*Female*	*Total*	*Male*	*Female*	*Total*	*Male*	*Female*	*Total*	*Male*	*Female*	*Total*	*Male*	*Female*	*Total*
Doctor's degree	186 (3.8)	15 (1.0)	201 (3.1)	65 (19.1)	1 (1.5)	66 (16.2)	54 (9.8)	5 (7.3)	59 (9.5)	8,123 (37.3)	666 (15.5)	8,789 (33.7)	287 (75.5)	14 (43.8)	301 (73.1)
Master's degree	3,579 (73.2)	851 (56.3)	4,430 (69.2)	236 (69.4)	56 (83.6)	292 (71.1)	401 (72.4)	45 (65.2)	446 (71.6)	9,909 (45.5)	1,964 (45.8)	11,873 (45.6)	64 (45.8)	9 (16.8)	73 (17.7)
Bachelor's degree	606 (12.4)	196 (13.0)	802 (12.5)	32 (9.4)	6 (9.0)	38 (9.3)	86 (15.5)	17 ([illegible])	103 (16.5)	3,360 (16.7)	1,630 (38.0)	5,260 (20.2)	27 (7.1)	9 (28.1)	36 (8.7)
Others	522 (10.7)	451 (29.8)	973 (15.2)	7 (2.1)	4 (6.0)	11 (2.7)	13 (2.4)	2 ([illegible])	15 (2.4)	99 (0.5)	26 (0.6)	125 (0.5)	2 (0.5)	0 (0.0)	2 (0.5)
Total	4,893 (100.0)	1,513 (100.0)	5,406 (100.0)	340 (100.0)	67 (100.0)	407 (100.0)	554 (100.0)	[illegible] (100.0)	623 (100.0)	21,761 (100.0)	4,286 (100.0)	26,047 (100.0)	380 (100.0)	32 (100.0)	412 (100.0)

Table 3.20 Instructional staff by degree awarded (Master/Doctor)

Classification		*Junior colleges*	*Miscellaneous schools*	*Teachers' colleges*	*Colleges and universities*	*Graduate schools*	*Total*
1975	Total	23	200	791	10,080	162	11,256
	Doctor	1	16	6	2,709	98	2,830
	Master	4	118	244	4,042	50	4,458
	% of doctor	(4.3)	(8.0)	(0.8)	(26.9)	(60.5)	(25.0)
	% of master	(17.4)	(59.0)	(30.8)	(40.1)	(30.9)	(39.6)
1980	Total	5,488	152	564	14,458	238	20,900
	Doctor	77	26	12	4,683	152	4,950
	Master	2,738	83	263	6,353	78	9,515
	% of doctor	(1.4)	(17.1)	(2.1)	(32.4)	(63.9)	(23.7)
	% of master	(49.9)	(54.6)	(46.6)	(43.9)	(32.8)	(45.5)
1985	Total	6,406	407	623	26,047	412	33,895
	Doctor	201	66	59	8,789	301	9,416
	Master	4,430	292	446	11,873	73	17,041
	% of doctor	(3.1)	(16.2)	(9.5)	(33.7)	(73.1)	(27.8)
	% of master	(69.2)	(71.7)	(71.6)	(45.6)	(17.7)	(50.3)

Table 3.20 shows the changes in the distribution of faculty members with master's degree or above during the past ten years. It is worth noting that the ratio of teaching staff with doctor's degree is on the increase. As shown in Table 3.20, the number of doctoral degree holders among newly appointed faculty members has steadily risen since 1975. Taking colleges and universities for example, of the some 4,000 new faculty members appointed during 1975-1980, approximately 2,000 had doctor's degrees accounting for nearly 50 per cent of the total newly appointed teaching staff. The number has increased to 4,000 out of the total new appointees of some 12,000 during the 1980-1985 period. As for teachers' colleges, the number of doctoral degree holders among faculty members, which stood at six in 1975, increased to 12 in 1980 and further to 59 in 1985.

The analysis of the distribution of faculty members by teaching experience shows two distinctive features. First, professors with more than 15 years teaching experience tend to constitute the majority in teachers' colleges and graduate schools. Secondly, inexperienced faculty members form the main body of junior colleges, miscellaneous schools, and colleges and universities.

Table 3.21 Number of instructional staff by teaching experience (1985)

Classification	*Junior colleges*	*Miscellaneous schools*	*Teachers' colleges*	*Colleges and universities*	*Graduate schools*
Total	6,406 (100.0)	407 (100.0)	623 (100.0)	26,047 (100.0)	412 (100.0)
Less than 5 years	1,941 (30.3)	126 (31.0)	44 (7.1)	8,423 (32.3)	75 (18.2)
5-10 years	1,734 (27.1)	94 (23.1)	44 (7.1)	5,206 (20.0)	25 (6.1)
10-15 years	1,278 (20.0)	79 (19.4)	65 (10.4)	4,041 (15.5)	37 (8.0)
15-20 years	743 (11.6)	51 (12.5)	87 (14.0)	2,915 (11.2)	59 (14.3)
20-25 years	367 (5.7)	29 (7.1)	101 (16.2)	2,379 (9.1)	72 (17.5)
25-30 years	216 (3.4)	21 (5.2)	132 (21.2)	1,693 (6.5)	60 (14.6)
More than 30 years	127 (2.0)	7 (1.7)	150 (24.1)	1,390 (5.3)	84 (20.4)

It seems that these features are attributable to the fact that there have been a large number of faculty recruitments in the latter institutions since 1980 to meet the increasing demand. Since a majority of faculty members in institutions of higher education are without much teaching experience, higher education institutions are young and vigorous in organizational character.

In principle, institutions of higher education are to select new faculty members through open competition on the basis of the GPA at the graduate or undergraduate level, research career, and degrees awarded. However, the common practice still is to make selections within the same academic school. The establishment of the Information Center for Faculty Resources by the Korean Council for University Education (KCUE) represents an attempt to redress the situation in favor of selecting new faculty members based on objective information. The attempt has not been successful thus far due to the lack of co-operation on the part of higher learning institutions.

As for the training of new faculty members, it was originally conducted by the Academy of Korean Studies. But the training programme came under criticism due to its contents and methodologies. In 1985 the training of new faculty members was delegated to the Korean Council for University Education (KCUE). To promote efficiency of the programme, KCUE carried out a research study on the development of a training programme for new faculty members in the same year. The research recommends that the programme be managed in such a way as to expand the autonomy of individual colleges and universities. As for the method of the programme, it recommends workshop style management of the session rather than complete devotion to lectures.

B. Educational environments: It is essential for an efficient instruction that the faculty-student ratio remain at an optional level. Realizing its significance, major nations in the world are making efforts to keep the ratio within the proper level. For example, the ratio stands at 1:24.75 in the U.S. (1981), 1:20.03 in France (1975), 1:9.17 in West Germany (1982), 1:13.21 in Finland (1982), 1:10.76 in Japan (1982), and 1:10.99 in Mexico (1982). Meanwhile, the ratio stood at 1:33.27 in Korea as of 1984, which is much higher than that of the aforementioned nations.

The deterioration of the ratio has been brought about by the rapid growth in the student body following the implementation of the graduation quota system. The decreased faculty-student ratio has in turn reduced personal contact hours between individual students and teachers, thus adversely affecting the efficiency of the instructional process.

Table 3.22 shows the number of students per faculty in institutions of higher education during 1975-1985. As seen in the table, the average faculty-student ratio is on the increase. Per faculty students showed an increase of four in junior colleges, 12 in miscellaneous schools, six in teachers' colleges, and 0.5 in colleges and universities during the period 1975-1980. During 1980-1985, number of students per faculty recorded an increase of ten in junior colleges, 16 in miscellaneous schools, 13 in teachers' colleges, and 15 in colleges and universities. This is an indication that the increase of faculty members was not sufficient enough to keep up with the rapid expansion in student population.

Table 3.23 shows the number of students per faculty by field of study. In junior colleges, the number stands at 54.8 in marine and fisheries, 52.9 in social sciences, 49.1 in arts, and 46.5 in engineering.

Table 3.22 Change in number of students per faculty

Classification		*Junior colleges*	*Miscellaneous schools*	*Teachers' colleges*	*Colleges and universities*
1975	Total	23.9	15.0	10.8	20.7
	National	15.4	–	10.8	16.5
	Public	–	–	–	7.9
	Private	24.7	15.0	–	23.0
1980	Total	27.6	26.7	16.7	21.2
	National	18.9	–	16.7	25.0
	Public	12.8	–	–	30.8
	Private	30.5	26.7	–	29.2
1985	Total	37.8	42.9	29.2	35.8
	National	24.0	–	29.2	29.5
	Public	10.8	–	–	37.6
	Private	40.2	42.9	–	38.6

Table 3.23 Number of students per faculty by field of study (1985)

Classification	*Junior colleges*	*Miscellanous schools*	*Colleges and universities*
Total	37.8	42.9	35.8
Languages and literature	11.0	20.1	34.3
Humanities	–	37.8	15.6
Social sciences	52.9	58.2	59.1
Natural sciences	27.7	–	28.1
Engineering	46.5	–	55.4
Agriculture and forestry	31.6	–	33.3
Marine and fisheries	54.8	–	33.8
Arts	49.1	34.4	27.2
Physical education	8.6	95.1	13.7
Medicine	44.0	–	11.0
Education	37.1	44.2	72.0

Note: Korea Air and Correspondence University and open colleges are excluded due to lack of data.

In miscellaneous schools, physical education shows the highest number with 95.1 students per faculty, followed by 58.2 students in social sciences. In colleges and universities, the number of students per faculty stands at 72.0 in education, 59.1 in social sciences, 55.4 in engineering and 34.3 in languages and literature. In general, the social sciences, engineering, and education show a high number of students per faculty.

As has been examined thus far, the faculty-student ratio in higher education has decreased over the past ten years. In view of the fact that the student-faculty ratio is a significant factor in determining the quality of education, it may be said that higher education environments have deteriorated since 1980.

C. Facilities: Facilities requirements for institutions of higher education are prescribed by presidential decrees such as the decree on the criteria for the establishment of colleges and universities, the decree on the criteria for the establishment of junior colleges, and the decreee on the criteria for the establishment of open colleges.

As for school land area, it should be more than five times the total area of school buildings. When an institution of higher education has separate campuses, each campus should satisfy the requirement for school land area. School land area here refers to all the land area within the school boundary except for farms, forests, animal husbandary, fish-farms, and herbary.

School buildings include such facilities as lecture rooms, laboratories, faculty offices, administrative offices, auditoriums, libraries, gymnasiums, student welfare facilities and other auxiliary facilities. As for faculty offices, it is stipulated that an institution be equipped with faculty offices whose number is the same as or more than the number of faculty members with the title of assistant professorship and above. It is also stipulated that a playground intended for outdoor athletic activities of students be located within the boundary unless otherwise approved by the Minister of Education. Libraries should include such facilities as reading rooms, periodical rooms, reference rooms, stack rooms, administrative offices and other necessary facilities.

Facilities requirements for miscellaneous schools are seven tenths of the requirements for colleges and universities. The decree on the criteria for the establishment of junior colleges stipulates that the school land area be three times or more than the area of the building site area unless otherwise recognized by the Minister of Education. In that case, the school land area may be reduced by a third. School buildings should include lecture rooms, laboratories, health clinics, audio-visual rooms, cafeterias, student lounges, and other facilities necessary for educational or welfare purposes.

The playground should be well drained and meet the size requirements. For example, an institution with a student enrolment of less than 1,000 is required to be equipped with a playground which is more than 20 metres wide with a diagonal of 50 metres. If the student enrolment exceeds 1,000, the playground should be more than 6,000 square metres in size. Meanwhile, an institution with physical education department is required to have a 15,000 square metre big playground. Library facilities must include a periodical room, stack room, and administrative room in addition to a reading room with a minimum seating capacity of ten per cent of the total students.

It is stipulated that the school building site area for open colleges be at least three times the sum of the floor space of the first floors of the buildings. School building site area here refers to the building site area excluding the playground, farm, forest, fish-farm, and herbary. The school building site area and playground requirements for open colleges are the same as those for junior colleges.

Table 3.24 Building site requirements

(unit : m^2)

Student quota	Less than 400	400 – 2,000	2,000	2,000 – 8,000	8,000	8,000 – 16,000	More than 16,000
Area requirements	3,395	2.66S + 2,331	7,651	2.26S + 3,131	21,211	1.96S + 5,531	1.62S + 10,971

Note: Stands for student quota.

How well an institution of higher education is equipped with facilities can be judged by how well it meets the facilities requirements. Due to lack of data and information on facilities of other types of institutions, this paper will confine its scope of discussion to facilities of colleges, universities and teachers' colleges.

As shown in the Table 3.25, colleges, universities, and teachers' colleges met 89 per cent of the school land area requirements as of 1984. By type of establishment, national institutions met 96 per cent of the requirements whereas the ratio of their private counterparts stands at 87 per cent. As for teachers' colleges, which are national institutions, the ratio stands at 86 per cent.

As shown in the Table 3.26, institutions of higher education met 92 per cent of school building requirements. By type of institution, the ratio of national institutions remains at 97 per cent whereas the ratio of private institutions stands at 91 per cent.

Table 3.27 shows the school buildings by use. As shown, school buildings are divided into lecture rooms, experiment and practical training rooms, managerial rooms, auxiliary facilities, and others.

Lecture rooms constitute larger proportions in junior colleges, miscellaneous schools, and graduate schools than in colleges, universities and teachers' colleges. Experiment and practical training rooms, miscellaneous schools show the lowest percentage.

Table 3.28 shows the number of rooms in school buildings by use.

To analyse the number of professors' laboratories in more detail, faculty members with full-time instructorship and above at colleges and universities have their own individual offices, whereas professor's offices made available in junior colleges amount to only 63 per cent, making it inevitable that some faculty members share one office. The detailed analysis also reveals that there are an insufficient number of professors' offices at graduate schools. But it is not a matter of grave concern since the faculty members of a graduate school, who also teach at the undergraduate level, have their own offices at colleges and universities.

The school land area per student shows a substantial difference between national and private institutions as is shown in Table 3.30. For example, school land area per student is 1,114 square metres in national institutions, 87 square metres in public schools, and 153 square metres in private institutions. The average per student land area stands at 378 square metres nationwide. To analyse in more detail by type of institution, per student land area stands at 103

Table 3.25 Overview of school land area (1984)

Classification	*Number of schools*	*Student population*	*School land area requirement (A)*	*School current land area (B)*	*A − B*	*B/A (%)*
Total	110	626,653	28,596,529	50,368,111	3,030,405	89
Colleges and universities	99	609,853	27,837,544	49,457,074	2,920,488	90
National & public	21	184,430	7,855,126	13,659,063	305,616	96
Universities	10	155,162	6,382,201	9,726,893	280,868	96
Colleges	11	29,268	1,472,925	3,932,170	24,748	98
Private	78	425,423	19,982,418	35,798,011	2,614,872	87
Universities	32	343,159	14,643,479	26,455,146	1,977,607	87
Colleges	46	82,264	5,338,939	9,342,865	637,265	88
Teachers' colleges	11	16,800	758,985	911,037	109,915	86

Table 3.26 Overview of school buildings (1984)

(unit: m^2)

Classification	*Building requirement (A)*	*Current building (B)*	*A – B*	$\frac{B}{A}$ (%)
Total	5,723,311	6,209,758	436,010	92
Colleges and Universities	5,571,513	6,032,984	430,906	92
National & public	1,575,016	1,839,479	53,776	97
Universities	1,280,441	1,527,290	38,416	97
Colleges	294,585	312,189	15,360	94
Private	3,996,487	4,193,505	377,130	91
Universities	2,928,698	3,167,047	162,439	95
Colleges	1,067,789	1,026,458	214,691	80
Teachers' colleges	151,798	176,774	5,104	97

Source: KCUE, *A study on the Criteria for University Facilities*, 1985.

square metres in junior colleges, 84 square metres in teachers' colleges, 475 square metres in colleges and universities, and 732 square metres in miscellaneous schools. There is a considerable difference between various types of institutions in per student land area.

As for the school building area per student, the nationwide average stands at 7.65 square metres. To divide by type of establishment the per student building area stands at 9.29 square metres among national institutions whereas it stands at 7.14 square metres among private institutions. As is shown, the building area per student is larger at national institutions than at the private level. To analyse the building area by type of institution, the per capita building area is 6.91 square metres in junior colleges, 11.9 square metres in teachers' colleges, 8.25 square metres in colleges and universities, 0.89 square metres in graduate schools, and 8.02 square metres in miscellaneous schools. There is also a considerable difference between various types of institutions in school building area per students.

D. Equipment: Equipment requirements for institutions of higher education are prescribed by presidential decrees such as the decree on the criteria for the establishment of colleges and univer-

Table 3.27 School buildings by use

Classification	*Junior colleges*	*Miscellanous schools*	*Teachers' colleges*	*Colleges and universities*	*Graduate schools*
Lecture rooms	3,686 (23.3)	469 (27.5)	350 (17.8)	10,590 (15.2)	177 (26.4)
Experiment & practical training rooms	6,178 (39.1)	384 (22.5)	727 (36.9)	28,307 (40.7)	222 (33.1)
Managerial rooms	4,525 (28.6)	458 (26.8)	530 (26.9)	19,946 (28.7)	164 (24.5)
Auxiliary facilities	51 (0.3)	– (–)	15 (0.8)	487 (0.7)	– (–)
Others	1,357 (8.6)	395 (23.2)	346 (17.6)	10,219 (14.7)	107 (16.0)
Total	15,797 (99.9)	1,106 (100.0)	1,968 (100.0)	69,550 (100.0)	670 (100.0)

Source: The Ministry of Education, *Statistical Yearbook of Education*, 1985.

Table 3.28 Number of rooms in school buildings by use

Classification		*Junior colleges*		*Miscellaneous schools*		*Teachers' colleges*		*Colleges and universities*		*Graduate schools*	
Lecture rooms		3,686	(30.7)	469	(19.5)	350	(31.8)	10,590	(129.1)	177	(0.9)
Experiment & practical training rooms	Professor laboratories	2,441	(20.3)	170	(7.1)	410	(37.3)	15,722	(191.8)	182	(0.9)
	Student's practical training room	3,239	(27.0)	122	(9.1)	235	(21.4)	11,135	(135.8)	20	(0.1)
	Fine arts	4	(0.0)	1	(0.0)	7	(0.6)	36	(0.4)	–	(–)
	Music hall	9	(0.1)	3	(0.1)	10	(0.9)	92	(1.1)	–	(–)
	Gymnasium	17	(0.1)	6	(0.3)	10	(0.9)	86	(1.0)	–	(–)
	Home management house	13	(0.1)	1	(0.0)	5	(0.5)	73	(0.9)	–	(–)
	A-V material room	97	(0.8)	12	(0.5)	17	(1.5)	347	(4.2)	3	(0.0)
	Language laboratories	78	(0.7)	3	(0.1)	7	(0.6)	293	(3.6)	–	(–)
	Library	134	(1.1)	30	(1.3)	11	(1.0)	187	(2.3)	8	(0.0)
	Auditorium and cinema	69	(0.6)	24	(1.0)	9	(0.8)	119	(1.5)	4	(0.0)
	Professors' hall	20	(0.2)	3	(0.1)	3	(0.3)	23	(0.3)	1	(0.0)
	Students' hall	57	(0.5)	9	(0.4)	3	(0.3)	189	(2.3)	4	(0.0)
	Total	6,178	(51.5)	384	(16.0)	727	(66.1)	28,307	(345.2)	222	(1.1)
Managerial rooms	Presidents' rooms	127	(1.1)	26	(1.1)	14	(1.3)	243	(3.0)	31	(0.2)
	Professors' office	958	(8.0)	53	(2.2)	138	(12.5)	4,584	(55.9)	22	(0.1)
	Meeting room	1,013	(8.4)	131	(5.5)	123	(11.2)	5,952	(72.6)	59	(0.3)

(continued)

Table 3.28 *(continued)*

Classification		*Junior colleges*	*Miscellaneous schools*	*Teachers' colleges*	*Colleges and universities*	*Graduate schools*
	Resting room and dining room	314 (2.6)	37 (1.5)	21 (1.9)	903 (11.0)	8 (0.0)
	Night duty room	135 (1.1)	19 (0.8)	17 (1.5)	696 (8.5)	5 (0.0)
	Medical room	66 (0.6)	7 (0.3)	7 (0.6)	208 (2.5)	2 (0.0)
	Warehouse (No. of buildings)	308 (2.6)	44 (1.8)	59 (5.4)	1,013.8 (12.4)	13 (0.1)
	Toilet (space)	1,160.4 (9.7)	99.9 (4.2)	87.7 (8.0)	3,009.1 (36.7)	20.2 (0.1)
	Othes	443.8 (3.7)	41 (1.7)	63 (5.7)	3,338 (40.7)	4 (0.0)
Total		4,525.2 (31.7)	457.9 (19.1)	529.7 (48.2)	19,946.9 (243.3)	164.2 (0.8)
Auxiliary facilities	Hospital attached	3 (0.0)	– (–)	– (–)	122 (1.5)	– (–)
	Dentistry hospital attached	1 (0.0)	– (–)	– (–)	7 (0.1)	– (–)
	Veterinary hospital	– (–)	– (–)	– (–)	5 (0.1)	– (–)
	Training pharmacy	– (–)	– (–)	– (–)	9 (0.1)	– (–)
	Factory attached	5 (0.0)	– (–)	1 (0.1)	30 (0.4)	– (–)
	Fishery processing factory attached	11 (0.1)	– (–)	– (–)	1 (0.0)	– (–)
	Farm buildings	26 (0.2)	– (–)	2 (0.2)	257 (3.1)	– (–)
	Museum	4 (0.0)	– (–)	3 (0.3)	46 (0.6)	– (–)
	Science hall	1 (0.0)	– (–)	9 (0.8)	10 (0.1)	– (–)
Total		51 (0.4)	– (–)	15 (1.4)	487 (5.9)	– (–)

(continued)

Table 3.28 *(continued)*

Classification		*Junior colleges*	*Miscellaneous schools*	*Teachers' colleges*	*Colleges and universities*	*Graduate schools*
Others	Dormitory	1,150 (9.6)	365 (15.2)	312 (28.4)	8,887 (108.4)	42 (–)
	Teachers' residence attached	109 (0.9)	21 (0.9)	8 (0.7)	979 (11.9)	33 (–)
	Research institute attached	20 (0.2)	3 (0.1)	3 (0.3)	191 (2.3)	– (–)
	Others	78 (0.7)	6 (0.3)	23 (2.1)	162 (2.0)	32 (0.2)
	Total	1,357 (11.3)	395 (16.5)	346 (31.5)	10,219 (124.6)	107 (0.5)
Grand total		15,797.2 (131.6)	1,705.9 (71.1)	1,967.7 (178.9)	69,549.9 (848.2)	670.2 (3.3)

Source: The Ministry of Education, *Statistical Yearbook of Education,* 1985.

Note: The numbers in parenthesis represent the average number of rooms per school.

Table 3.29 Professors' laboratories

Classification	*Junior colleges*	*Miscellaneous schools*	*Teachers' colleges*	*Colleges and universities*	*Graduate schools*	*Total*
Professors' laboratories	3,399	223	548	20,311	204	24,685
1) Faculty members (excluding assistants) (A)	5,358	380	563	19,808	370	26,479
2) Faculty members (excluding full-time instructors and assistants) (B)	3,648	217	454	16,186	353	20,858
1) $\frac{\text{A}}{\text{professors' laboratories}}$	63.4 (%)	58.7 (%)	97.3 (%)	102.5 (%)	55.1 (%)	93.2 (%)
2) $\frac{\text{B}}{\text{professors' laboratories}}$	93.2 (%)	102.8 (%)	120.7 (%)	125.5 (%)	57.8 (%)	118.3 (%)

Source: The Ministry of Education, *Statistical Yearbook of Education*, 1985.

Note: Professors' laboratories include professors' offices.

Table 3.30 Per student land and building area

Classification	*Land area (m^2)*	*Building area (m^2)*	*Number of students*	*Per student land area*	*Per student building area*
Total	482,737,093	9,785,953	1,277,825	377.78	7.65
National	332,727,498	2,774,851	298,574	1,114.38	9.29
Public	462,718	41,672	5,296	87.37	9.00
Private	149,546,877	6,963,430	973,955	153.54	7.14
Junior colleges	25,046,306	1,674,701	242,114	103.44	6.91
National	13,168,187	229,085	22,902	574.97	10.00
Public	–	2,486	54	–	46.03
Private	11,878,119	1,443,130	219,158	54.19	6.58
Teachers' colleges	1,520,495	216,396	18,174	83.66	11.90
National	1,520,495	216,396	18,174	83.66	11.90
Colleges and universities	442,629,324	7,693,269	931,884	474.98	8.25
National	317,988,606	2,327,276	238,343	1,334.16	9.76
Public	462,718	45,126	5,035	91.90	8.96
Private	124,178,000	5,320,869	688,506	180.35	7.72
Graduate schools	752,005	61,354	68,178	11.03	0.89
National	50,210	2,094	19,155	2.62	0.10
Public	–	62	207	–	0.29
Private	701,795	59,198	48,816	14.37	1.21
Miscellaneous schools (private)	12,788,963	140,233	17,475	731.84	8.02

sities, the decree on the criteria for the establishment of junior colleges, and the decree on the criteria for the establishment of open colleges. Article 9 of the decree on the criteria for the establishment of colleges and universities stipulates that laboratories and practical training rooms, playgrounds, and auxiliary facilities be furnished with the necessary equipment as designated by the Minister of Education. Article 12 of the same decree governs seats and the volumes of books in the library. Item 2 stipulates that a reading room in the library be equipped with seats that can accomodate at least 12 per cent of the entire student body. Items 3 states that an institution of higher education have at least 30 volumes of books per student or 5,000 volumes of books per department. It is further stipulated that three volumes of books per student be added every year. Item 4 of the same article, which governs periodical publications, stipulates that each department subscribe to at least ten different periodicals. It is further stipulated that departments of natural sciences subscribe to at least 15 different periodical publications.

Equipment requirements for junior colleges are prescribed by the decree on the criteria for the establishment of junior colleges. Article 8 of the decree stipulates that each department in need of experiments and practical training meet equipment criteria as prescribed by the Minister of Education. It also provided in Article 9 of the same decree that each department must have a minimum of 500 volumes of books. In case the student enrolment of a department exceed 80.5, more volumes of books should be added for each additional student. The library should be equipped with a minimum of two kinds of academic journals per department.

E. Research environment: The major functions of universities are often referred to as teaching, research and community services. Of those functions research activities contribute to the development of advanced knowledge and technology.

In order for the research activities to be carried out properly, they should be supported by sufficient research funds such as funds for personnel and experiment expenses. In this phase of the study, analysis of research environment will be made with emphasis on the expansion of research fund beneficiaries, increase of unit research funds, and the status of off-campus research projects and funds.

First per faculty research project stands at 0.29 as is shown in Table 3.31. By type of establishment, national institutions are lower than private schools in research grants. The fact that the faculty members with less than the average research project of 0.29 account for more than 85 per cent well illustrates that research activities are inactive at the present. Furthermore, the fact that 43.36 per cent of research projects come from off-campus organizations stress the need for strengthened on-campus support for research activities of faculty members.

The average research fund per research project stands at 1,920,000 won. By type of establishment national institutions grant larger amounts of research funds per research project than their private counterparts. For example, at national universities the per project research fund is 2,680,700 won whereas at theological colleges it is only 690,300 won. To divide the total amount of research funds into the number of faculty members, the average per faculty research fund is merely 560,000 won.

Table 3.31 Research funds for faculty

Classification	*Universities*		*Colleges*		*Special Colleges*		*Total*
	National	*Private*	*National*	*Private*	*Teachers'*	*Theological*	
Research project per faculty	0.29	0.25	0.12	0.51	0.28	0.34	0.29
Research fund per project (in 10 thousand won)	268.07	198.34	188.87	117.05	75.56	69.03	191.7
Research fund per faculty (in 10 thousand won)	79.03	50.14	22.21	59.73	20.86	21.15	56.20
Off-campus research fund (%)	82.03	52.14	43.44	16.87	–	19.26	57.24
Off-campus research project (%)	77.12	31.36	34.81	54.26	4.64	20.47	44.36

Source: KCUE Report on *Institutional Evaluation of Colleges and Universities*, 1985.

By sources of research funds, funds from off-campus sources account for 57.24 per cent. Especially at national universities, 82.03 per cent of the total research funds are from outside sources. On-campus research funds, which stand at 42.76 per cent, has shown a decrease of 14 per cent from 56.7 per cent in 1983.

In relation to this, it is worth noting that the number of research projects accounts for 44.36 per cent of the total. By type of establishment, national institutions carry out more off-campus research projects than private institutions, while teachers' colleges are engaged in off-campus research projects funded from outside sources.

In conclusion we can see that off-compus research funds are on the increase. However, the increase in outside research funds should not be followed by the reduction in on-campus research funds.

Determinants of quality in terms of instructional processes

A. Management of curriculum: Curriculum of higher education is basically under the responsibility of each institution. However, the ratio between liberal arts and majors is determined by law.

Junior colleges, first of all, have developed model curriculum to emphasize their unique characteristics and have operated with the ratio between liberal arts and majors as 20 : 80. Since the 1982 school year, the ratio has been revised to 20-30 : 70-80, providing increased flexibility. The ratio between theories and practices in majors is set at 50 : 50. With joint efforts by college professors and industry people, instructional materials close to actual industrial spots in such areas as manufacturing, fisheries and marine, agriculture, and health have been developed and used. Junior colleges attempt industrial education's substantial improvement in co-operating with schools and industries and make on-the-job training intensified or obligatory to train technical manpower which industries demand.

The Korea Air and Correspondence University has departments in home economics, business administration, agriculture, elementary education, public administration, and child education. The curriculum mainly consists of self-studies, lectures on broadcasting, and submission of homework and asking questions, both oral and by correspondence. The physical attendance at participating colleges during their vacations comprises of lectures, lab works, practical training, examinations, submission of assignments, etc. The required earned credit hours for graduation is 140 during the 5-10 years of enrolment. Capable students can graduate within 4-4½ years. Also students should pass the graduation examination to be eligible for a bachelor's degree.

There are six participating open colleges nationwide: three national and three private; five in engineering and one in economics and business fields. Though each year's credit standard is specified, it is the same as the upper and lower limits of earned credit hours of a year. School terms are operated by semesters and seasons. Classes are classified as full-time day-time classes, part-time evening classes and seasonal classes conducted during vacations. The open college's required earned credit hours are: 70 credit hours or over for junior college courses; 140 credit hours or over for bachelor's degree courses; 35 credit hours or less for special courses. Bachelor's degrees are granted for those students who have completed bachelor's degree courses of the open college and have also passed a comprehensive examination in liberal arts and major courses in accordance with the school regulations.

Table 3.32 Number of graduates of the Korea Air and Correspondence University by course

Classification	*Entrants (Bachelor's degree course)*	*Graduates (Bachelor's degree course)*	*Percentage*
Total	115,419 (30,609)	36,835 (7,971)	31.9 (26.0)
Home economics	17,623 (4,877)	3,984 (833)	22.6 (17.1)
Business administration	27,470 (8,766)	9,151 (1,515)	22.4 (17.3)
Agriculture	17,156 (4,028)	3,505 (836)	20.4 (20.8)
Elementary education	23,082 (4,927)	14,148 (2,392)	61.3 (48.5)
Public administration	27,781 (8,011)	8,647 (2,395)	31.1 (29.9)
Child education	2,307 (–)	400 (–)	17.3 (–)

Source: The Ministry of Education, *Statistical Yearbook of Education*, 1985.

Since the teachers' colleges are to train elementary school teachers, emphasis is made on developing teaching skills and desirable personality as educators. Elementary school teachers are required to handle the entire curriculum. Therefore, the students, while on enrolment, should prepare themselves with the necessary basic knowledge and technics on one side, and cultivate the educator's view of life on the other. The curriculum of teachers' colleges encourages each student to make constant efforts for self-improvement, to enhance teaching technics as an elementary school teacher, to develop individual characteristics, and to respond effectively to educational environment peculiar to any regional community. The minimum credit hours required for the completion of a bachelor's degree is 140, with 46 in liberal arts and 70 in majors. (The credit hours for majors is 70, and composed of 24 in basic education courses, 42 in professional education courses, and four in educational practice.), 21 for second majors, and three in elective courses. A graduation thesis is also required.

Table 3.33 Overview of open colleges

Region	*Field of study*	*Name*	*Estab-lishment*	*Year of estab-lishment*	*Instructional staff (secure-ment ratio)*	*Total admission (rate of competition)*		*Enrolments*			
						Freshmen	*Students transferred in*	*1982*	*1983*	*1984*	*1985*
Seoul	Engineering	Kyoggi Engineering	National	1982	155 (91.7)	954 (3.2)	1,067 (3.9)	2,074	9,719	8,030	8,901
Busan	Engineering	Busan	National	1984	121 (93.1)	957 (1.5)	965 (2.0)	–	–	1,716	3,877
Daejeon	Engineering	Daejeon	National	1984	104 (99.0)	868 (1.6)	1,177 (1.8)	–	–	1,464	4,070
Kwangje	Business Administration	Kwangju	Private	1984	87 (78.4)	1,021 (1.7)	1,168 (1.8)	–	–	1,798	4,659
Daegu	Enginerring	Kyungpook	Private	1983	62 (93.9)	1,040 (2.3)	1,080 (3.4)	–	–	–	2,188
Gunsan	Engineering	Gunsan	Private	1983	48 (87.2)	464 (2.0)	567 (1.7)	–	–	–	1,040
		Total			577 (90.7)	5,509 (2.0)	6,024 (2.4)	2,074	9,719	13,008	24,719

Source: Non-formal and Vocational Education Bureau, The Ministry of Education, *Report on the General Status of Open Colleges*, 1985.

The colleges of education, which are to train middle and high school teachers, vary in the composition of credit hours by each college. In the case of Kongju College of Education, the required credit hours for graduation are 150, which are divided into 46 in liberal arts, 18 in teaching courses, 59 in majors, and 27 in general elective courses. Liberal arts courses are broken down into compulsory courses (28 credit hours) and elective courses (18 credit hours). The compulsory courses in teaching courses include the educational practice and course instructions. Major subjects, too, are divided into compulsory courses (26 credit hours) and elective courses. Second majors are allowed except for the students of the departments of physical education, music and arts, who are not eligible for second majors. Also that students with poor scholastic records or with due reasons are not eligible for second majors.

As for universities and colleges, the minimum earned credit hours required for graduation are 140. The curriculum of colleges is made up of liberal arts and majors, and they are divided again into compulsory and elective courses. The liberal arts courses are for nurturing student's personality as leaders, and majors are for direct academic researches. The standard credit ratio of liberal arts is 30 per cent of the total credit hours. Each semester's standard credit hours is 18, with 21 as maximum. For limited superior students, it is possible to earn as many as three credit hours over the maximum credit hours, which makes possible early graduation. Also it is possible to earn up to 12 credit hours over the maximum through special examinations. A thesis is required for graduation, but for those departments where thesis presentation is not appropriate in view of curricular character, reports on lab-works and practices, exhibitions, or comprehensive graduation examinations can take the place of a thesis.

For graduate schools, the maximum earned credit hours per semester is 12, and six in seasonal or night-time graduate schools. Postgraduate students winning over 24 credit hours after one year or more of study at a graduate school and having passed foreign language examinations and comprehensive master's degree examinations are qualified to submit a thesis. Master's degrees are granted to those who have passed thesis inspections and oral examinations supervised by a special committee of three or more professors (with approval of two-thirds of the members) designated by the dean of the graduate school. Students winning over 60 credit hours in majors (including credits for a master's degree) after three or more years of graduate study and having passed two foreign language tests and comprehensive qualifying examinations are qualified to submit doctorate dissertations. Ph. D. degrees are granted to those who have passed dissertation inspections and oral tests and received the degree awarding decisions from the Graduate School Committee.

B. *Class preparation:* Thorough and careful planning in class preparation can contribute to uplifting the quality of classes. As an index to such planning, herein provided is a comprehensive picture of weekly lecture hours, number of main and minor texts, and syllabus planning by region and college type nationwide (Table 3.34).

According to this, the weekly average lecture hours per professor is 10.78, while the minimum requirement is nine hours. This phenomenon is worse in national comprehensive universities than in other colleges. There are occasions when weekly lecture hours reach a maximum of 23. There are considerable differences among colleges. Also the average number of texts per course is one main text and two supplementary texts. It indicates that classes are conducted mostly on the basis of one main textbook. Even though the quantity of texts used in one course is not necessarily related to the quality of a course, we need to ponder upon the situation where classes conducted with single texts are still prevalent.

The rate of syllabus preparation is around 85 per cent, while the rate of syllabus distribution remains around 20 per cent. That is, while it is common to submit syllabuses to head offices, it is rare that such syllabuses are handed out to students. This indicates that syllabus preparation remains a formality and classes are conducted without much relevance to syllabuses in all colleges. Class conducted without planning has been a customary practice in colleges. It is difficult to expect qualitative improvement of classes unless there are shifts to careful planning of classes. We have to take into consideration that in advanced countries the syllabuses are related to courses and are thoroughly planned and effectively used.

C. *Instructional methods:* It is desirable that the instructor adopt various teaching methods with course characteristics in mind. We have to realize that the unilateral dependence on a stereotyped instructional method in all courses is meaningless practically, and may decrease the efficiency of lectures and studies.

Table 3.34 Variables of class preparation by type of institution

Variable	*Unit*	*Respondents*	*Comprehensive universities*		*Colleges*		*Theology*	*Total*
			National	*Private*	*National*	*Private*		
Weekly lecture hours	hour	84	11.30	10.89	9.34	10.48	9.72	10.78
Number of main texts per course	book	84	1.22	1.28	1.06	1.08	1.33	1.03
Number of supplementary texts per course	book	84	2.43	2.26	2.50	2.00	2.71	2.28
Syllabus preparation	%	84	83.43		85.90		87.27	84.98
Syllabus distribution	%	84	20.35		21.34		15.70	20.17

Table 3.35 shows the distribution of instructional methods, and Table 3.36 indicates its classification by type of institution. According to Table 3.37 lectures comprise 23.4 per cent; lectures plus seminars comprise 37.7 per cent, the highest rate; seminars plus lab work and practice comprise 17.8 per cent; lectures; seminars, lab work and practice combined comprise 14.7 per cent. It is noteworthy that classes depending entirely on seminars or on lab work and practice comprise very small portions. Classification by type of institution also shows the same tendency.

Table 3.35 Distribution of instructional methods

Methods	*Unit*	*Respondents*	*Mean*	*Standard deviation*	*Minimum*	*Maximum*
Lectures	%	84	23.43	17.13	0.00	91.67
Seminar	%	84	0.67	2.20	0.00	16.67
Lab work	%	84	0.89	2.68	0.00	20.00
Lectures & Seminars	%	84	37.70	15.20	0.00	72.22
Lectures & Lab work	%	84	1.70	4.60	0.00	25.00
Seminars & Lab work	%	84	17.81	13.11	0.00	50.00
Lectures & Seminars & Lab work	%	84	14.73	15.33	0.00	100.00

Table 3.36 Distribution of instructional methods by type of institution

Classification	*Unit*	*Comprehensive universities*		*Colleges*		*Theology*	*Total*
		National	*Private*	*National*	*Private*		
Lectures	%	22.08	23.53	17.04	26.46	16.67	23.43
Seminars	%	0.31	1.26	0.33	0.28	0.00	0.67
Lab work	%	1.61	1.17	0.00	0.69	0.00	0.89
Lectures and Seminars	%	34.09	38.02	35.42	38.09	56.25	37.70
Lectures and Lab work	%	0.84	1.62	2.93	1.78	0.00	1.70
Seminars and Lab work	%	17.35	15.60	13.99	21.31	25.00	17.81
Lectures and Seminars and Lab work	%	16.56	15.28	30.78	8.80	2.08	14.73

The results show that professors prefer lectures or lecture plus seminars. But at the same time they indicate that professors place a special value on the seminar method. Judging from the responses received, the instructional methods adopted at our colleges are diverse and show preferences on the seminar. But the seminar method indicated here does not mean seminars as fixed structure of classes, but the classes which adopt methods that induce students' active participation. In summing it up, instructional methods of today comprise mostly of those that induce students to actively research, participate, prepare and present. We need to encourage this trend with the principle that the quality of classes is in functional relationship with student participation rate.

D. Methods of study evaluation: The evaluation of student's study results has traditionally been the most important determinant in instructional methods in the sense that it serves as a directive to determine study methods. There is no exception in modern institutions of higher education.

Table 3.37 shows how much of each sector in study evaluation such as quizzes, home assignments, presentation, mid-term examination, final examination, and attendance are applied to grade evaluation. According to the national average, the final examination accounts for the highest portion 32.2 per cent, and next comes mid-term examination (26.67 per cent), home assignments (15.37 per cent), attendance (10.57 per cent), presentation (7.18 per cent), and quizzes (6.22 per cent). As expected, results of the final examination and the mid-term examination are the most important variables. But the high rates occupied by assignments and attendance indicate that the emphasis in evaluation is shifting from a result-minded tradition to a process-minded trend. From this point of view there are needs to raise the evaluation rates of presentation and quizzes.

Determinants of quality in terms of outputs

A. Employment: To consider the status of graduates' employment as a determinant of quality in higher education is an excessive simplification. For, the quantitative growth of employees, though educated manpower created employment on its own initiative, it is mostly determined by the social demands within the economic structure.

Table 3.37 Distribution of study evaluation methods by type of institution

Evaluation variable	*Unit*	*Comprehensive universities*		*Colleges*		*Theology*	*Total*
		National	*Private*	*National*	*Private*		
Quizzes	%	6.46	4.70	6.34	5.20	4.27	6.22
Assignments	%	17.16	16.81	14.62	16.40	9.74	15.37
Presentation	%	8.54	7.82	7.09	6.63	13.11	7.18
Mid-term exam	%	25.70	26.27	27.08	27.07	28.21	26.67
Final exam	%	34.13	32.92	32.21	32.15	36.37	32.20
Class attendance	%	7.99	11.45	12.63	12.51	8.17	10.57

When we consider the manpower produced by higher education institutions as an output of education, it was around 45,000 persons in 1975, 60,000 in 1980, and 215,000 in 1985. In 1985, the manpower production has grown 4.8 times as much as in 1975 and 3.6 times as much as in 1980. The capacity of colleges to produce manpower with higher education became relatively stronger (Table 3.38).

The number of employees with higher education increased from 24,000 in 1975 to 35,000 in 1980, and to 94,000 in 1985. In 1985, it had grown 3.9 times as much as in 1975 and 2.7 times as much as in 1980. A distinctive feature in this regard is that the number of those employed shows a rapid increase among graduates of two year junior colleges while the number of those employed among graduates of graduate school is gradually increasing. This is the result of gradual modernization of the industrial structure in modern society, where specialization in advanced manpower becomes more stratified.

B. Student achievement: A student today selects fewer credit hours than in the past. In the last several years the emphasis, particularly in the more academically rigorous institutions, has been on fewer credit hours and more on outside preparation and the use of research and the library approach to learning. Credentials of students graduating prior to the early 1980s had an average semester credit load of twenty to twenty-four credits. Programmes in technical, engineering and nursing fields normally have a higher semester credit hour load as is true for these programmes in the United States.

In reviewing credentials from miscellaneous schools, it is appropriate to take into consideration that these schools are specialized in their makeup and are predominantly theological. However, they may have an adequate academic programme. A careful review of the programme in conjunction with academic testing is recommended. This approach is taken by some colleges and universities.

Colleges and universities predominantly follow a letter grade system:

A = Excellent or superior
B = Good or above average
C = Fair or average
D = Inferior but passing
F = Failure

Table 3.38 Employment of graduates by type of institution

(%)

Classification		*Junior colleges*	*Miscellaneous schools*	*Teachers' colleges*	*Colleges and universities*	*Graduate schools*	*Total*
1975	Graduates	1,783 (3.95)	442 (0.98)	5,841 (12.94)	33,610 (74.45)	3,466 (7.67)	45,142 (100.00)
	Employed	820 (3.38)	235 (0.97)	653 (2.69)	19,635 (80.81)	2,951 (12.15)	24,294 (100.00)
1980	Graduates	1,940 (3.23)	426 (0.71)	2,494 (4.15)	49,735 (82.59)	5,553 (9.23)	60,148 (100.00)
	Employed	408 (1.15)	213 (0.60)	2,354 (6.66)	28,349 (80.16)	4,042 (11.43)	35,366 (100.00)
1985	Graduates	73,927 (34.40)	2,079 (0.97)	2,252 (1.05)	118,584 (55.19)	18,037 (8.39)	214,879 (100.00)
	Employed	29,556 (31.53)	960 (1.02)	1,192 (1.27)	48,552 (51.79)	13,479 (14.38)	93,739 (100.00)

Source: The Ministry of Education, *Statistical Yearbook of Education*, 1985.

Note: The figures of those employed represent the number of graduates employed as for April 1 of the corresponding year.

Other categories used are:

FA	= Failure for excessive absence	U	= Unsatisfactory
S	= Satisfactory	INC	= Incomplete
P	= Passing	W	= Withdrawal

Variations in devising systems are found such as A+, B+, etc. Normally, one hour of class work per week per semester generates one credit. Two to three hours of laboratory work per week per semester yield one semester of credit.

It is important to evaluate the credentials of students very carefully inasmuch as (1) there is as great a difference in the quality of colleges and universities in Korea as there is in the United States; (2) these differences in quality range from department to department within a college as well as between and among colleges and universities; (3) it is possible that a student from a top college or university may be in the bottom 30 per cent of the class and thus may not receive a degree while at the same time a student from a less academically rigorous institution may receive a degree; (b) for employment purposes, there is not a great deal of difference between the degree and the document certifying completion. The academic reputation of the college or university is more significant in relationship to employment.

C. Research: Research activities of professors should be conducted in a variety of ways and wide ranging, in both material and psychological dimensions, comparable to international standards as in other areas. The core part of research activities is the publication of research finding. The research activities usually take the form of the following; publication of theses and books; research-purpose trips, both domestic and abroad; and publication of collected essays.

Table 3.39 shows the number of papers released per professor during the five-year period until the end of school year 1984. The number nationwide is 4.87 during the five-year period and approximately one per year. However, there is a college with the maximum number of 9.70 papers and two per year.

Classification by type and establishment of institution indicates that professors in national comprehensive universities produce the most research papers which number 6.60 and 1.32 respectively.

According to the statistics between classes based on standard deviation unit centered on the average, all of the professors in national universities published research papers above average, and 60 per cent of them produced one SD more than average. Generally the number of published research papers of private colleges including theological colleges tends to be smaller than that of national universities. Professors of theological colleges produce the least, 2.28, in other words, one every two years.

Table 3.39 Research publications per professor

Classification	*Comprehensive universities*		*Colleges*		*Theological*	*Total*	*Maximum*
	National	*Private*	*National*	*Private*			
Research papers (5 year period)	6.60	4.36	5.25	3.45	2.28	4.87	9.70
Book (5 year period)	0.62	0.60	0.33	0.40	0.37	0.56	1.33
Overseas research trip (5 year period)	0.64	0.44	0.24	0.30	0.23	0.46	1.67
Research trip per year	2.26	1.86	2.39	1.69	0.68	1.96	4.28

Source: Korean Council for University Education, Report on the Institutional Evaluation of Colleges and Universities, 1985.

The number of book publications per professor during the last five years is 0.56, as seen in the above table, only one in ten years. A national university professor tends to publish more books than his counterpart in a private university. National college professors published 0.33 books during the five-year period, one book in 15 years, which is less than a private college professor. To conclude, national universities maintain higher positions in publication of books and collected essays; private universities take lower positions in collected essays but similar positions in the publication of books. Colleges produce less collected essays and books than universities; among colleges, private colleges produce less collected essays and books than national colleges. There is insufficient assistance for the research conducted by college professors. This reflects difficulty for private colleges in recruiting those professors capable of inducing grants for academic research from the Ministry of Education or other academic organizations.

The average number of a professor's research-purpose trips abroad is 0.46, which means that during the last five-years 46 out of 100 professors participated in overseas academic activities, and 46 per cent of all professors carried out one overseas academic activity during such period. But according to the analysis conducted by type of institution, opportunities for overseas academic activities are offered mostly to universities rather than to colleges, with preference given to national universities. Colleges and special colleges do not receive many preferences.

According to last year's evaluation of collegiate institutions (The Korean Council for University Education, 1984), the number of professors' overseas academic training has declined since 1982. While about 5.5 per cent of total number of full-time professors made overseas trips in 1982, the number declined to 4.5 per cent in 1983, and is expected to drop further. It is regrettable that the overseas academic training slowed down and it is a task upon which improvement is needed.

On the other side, research-purpose domestic trips are frequent and active, due to their low costs. The average frequency is two times a year per person with a maximum of 4.28 times. National colleges show 2.4, whereas theological colleges, which are private, show a very low number, less than one.

Publications of collected essays are compiled on an individual college basis. Since publications are one of the barometers to assess a college's research accomplishments, each college pursues this actively. But since the circumstances of each college are different, there are differences in the kinds of publication and funds available for this purpose among institutions of higher education.

The country's 110 universities and colleges publish 1 to 61 kinds of collected essays. According to Table 3.40 a total of 864 collected essays were published nationwide in 1984. The number represents a 17 per cent increase with the addition of 126 from the 738 of 1983, which is evidence of the high enthusiasm for publication of collected essays (the Korean Council for University Education, 1984). Each college or university is publishing 7.85 collected essays. There is considerable difference between universities and colleges in publication of collected essays due to the size difference between institutions. In some instances a university publishes a maximum of 61 and a college publishes 44. Compared by establishment, national institutions are publishing more collected essays than private institutions. In the average number of publications, regardless of universities, colleges, or special colleges, national institutions publish almost twice as many as private institutions.

There is a conspicuous tendency in all colleges to have the publication under the supervision of research institutes. More than half of the total publications are made by research institutes (459). As to the average number of publication by supervision, research institutes issue 4.17, while other organizations issue less than 1. In national universities, 12 collected essays per university are being published under the supervision of research institutes. In other colleges as well, excluding private universities and theological colleges, the publication of collected essays are made by research institutes, Among theological colleges, there are a few colleges without any publication of collected essays. It is desirable that research institute-centered collected essay publication be increased. It is interpreted as the result of recent measures to encourage and assist the expansion of research institutes and to strengthen their roles. The trend of increased publication of collected essays in colleges is an encouraging phenomenon resulting from a more stimulating research environment at institutions of higher education.

Financial assistance for publication of collected essays, as seen in Table 3.40, is higher in universities than in colleges or special colleges, and higher in national universities or colleges than in private universities or colleges. Annual average publication cost per book is around 3,100,300 won. The cost in national universities is 4,333,200 won, much higher than the cost in other institutions. The cost in private universities is 2,964,700 won, much lower than in national universities, though higher than in other institutions of higher education. Colleges, both national and private, show low standards. In special colleges, the cost in teachers' colleges is 3,631,100 won and the cost in theological colleges is 6,985,300 won. Theological colleges maintain a considerably high standard in publication cost per collected essay.

Table 3.40 Research publications by type of institution

Classification		*Comprehensive universities*		*Colleges*		*Special colleges*		*Total*
		National	*Private*	*National*	*Private*	*Teachers'*	*Theological*	
Supervising authorities	Head office	17	23	8	33	5	7	93
	College	33	33	5	5	7	5	88
	Graduate school	7	33	2	5	0	2	49
	Department	19	67	0	15	0	3	104
	Research institute	118	246	36	36	19	4	459
	Others	17	8	33	3	9	1	71
	Total	211	410	84	97	40	22	864
Average per institution		21.1	12.1	7.6	3.1	3.6	1.7	7.85
Minimum		2	1	3	0	2	0	–
Maximum		61	44	31	14	9	9	–
Average cost per publication (ten thousands)		433.32	296.47	133.11	166.20	363.11	698.53	–
Publication of foreign scholars papers (%)		5.65	4.49	1.85	0.66	–	6.36	–

Table 3.41 Average number of publications by supervising authorities

Supervising authorities	*Comprehensive universities*		*Colleges*		*Special colleges*		*Total*
	National	*Private*	*National*	*Private*	*Teachers'*	*Theological*	
Head Office	1.70	0.68	0.73	1.06	0.45	0.54	0.85
College	3.30	0.97	0.45	0.16	0.64	0.38	0.80
Graduate school	0.70	0.97	0.18	0.16	0.00	0.15	0.45
Department	1.90	1.97	0.00	0.48	0.00	0.23	0.95
Research institute	11.80	7.24	3.27	1.16	1.73	0.30	4.17
Others	1.70	0.24	3.00	0.10	0.82	0.08	0.65

The collected essays published by universities and colleges should not be evaluated solely by quantity. Qualitative excellence and improvement should become a premise and an objective. However, quality evaluation of collected essays is very difficult and controversial. Nevertheless, measures for quality improvement of essays should be devised. As to publication of foreign scholars' essays, which can be a criterion of such quality evaluation, the ratio of foreign scholars' essays to total essays is very low, an average of 4.17 per cent. One peculiar phenomenon in this criterion is that foreign scholars' essays show the highest rate in theological colleges as 6.36 per cent. It is understandable when we consider the fact that a relatively larger number of foreign professors are invited to our theological colleges. In other institutions of higher education, national universities again show higher publication numbers, followed by private universities. Private colleges publish less than national colleges. Teachers' colleges, which are national, have no foreigner's participation.

D. Community services: Schools should play a leading role in community development while the regional community should co-operate in the development of regional schools. Such schools are called community schools and colleges are required to actively promote such roles. Community services are carried out after school hours as a part of school activities by colleges, departments, and student circles. These community services should be actively expanded during summer and winter vacations. We will examine community services performed by institutions of higher education during the 1984-1985 school years.

Table 3.42 shows: (1) cost per community service; (2) participation rate of professors in community service; (3) participation rate of students in community service; (4) number of community service programmes. First, the average cost per community service is around 1,900,000 won, with a maximum of 55,210,000 won. Second, the average number of participating professors per community service is about eight, the overall total participating being 171 professors. Third, the average number of participating students per community service is four, with a maximum of 48. By this we know that there are not many students participating in one service. Fourth, the average number of community services per college is three, with a maximum of nine, in the 100 schools that responded.

Table 3.42 Overview of community services

Classification	*Unit*	*Respondent*	*Total*	*Minimum*	*Maximum*
1. Cost per service	Won (thousands)	86	1,897.45	0.00	52,210.00
2. Participation of professors	%	86	8.36	0.00	171.43
3. Participation of students	%	86	3.87	0.00	48.17
4. Community service programmes	Number	110	2.65	0.00	9.00

1. $\frac{\text{Total cost for community services}}{\text{Number of programmes}} = \text{Cost per community service}$

2. $\frac{\text{Number of participating professors}}{\text{Number of full-time faculty}} = \text{Participation ratio of professors}$

3. $\frac{\text{Number of participating students}}{\text{Number of students registered}} = \text{Participation ratio of students}$

The status of community services by university, college and special college, is shown in Table 3.43.

The average costs per community service are: 3,500,000 won in national universities and 2,100,000 won in private universities; 200,000 won in national colleges and 1,080,000 won in private

Table 3.43 Community services by type of institution

Classification	*Unit*	*Comprehensive universities*		*Colleges*		*Special*		*Total*
		National	*Private*	*National*	*Private*	*Teachers'*	*Theological*	
Cost per service	Won (thousands)	3,497.81	2,146.67	206.80	1,076.08	449.71	2,822.27	1,397.45
Participation of professors	%	9.50	7.47	4.44	8.73	18.46	9.94	8.36
Participation of students	%	3.92	3.45	3.87	4.55	7.35	7.78	3.87
Community service programmes	%	4.30	3.97	1.78	1.89	0.93	1.14	2.65

colleges; 2,820,000 won in theological colleges, which is quite a large amount. The participation rate of professors of universities and colleges, both national and private, is around ten per cent, except for 19.46 per cent of teachers' colleges. The participation rate of students is three to seven per cent, which is lower than that of professors. The number of community services is rather small; every university or college having from one to four programmes.

Among 100 universities and colleges, five schools, which account for 5.8 per cent of the total, are assigning over 8,850,000 won per community service; 11 schools, 13 per cent of the total, are assigning 1,890,000 – 8,850,000 won; 70 schools 81.4 per cent, are assigning less than 1,890,000 won. Given this, it is necessary that more than 80 per cent of universities and colleges put more funds into community services to activate them.

Items of community services are diverse. These include providing helping hands to agricultural and fishing communities, providing entertainment and service for the elderly, campaigning for preservation of natural resources, medical services, conducting night classes, technical services to agricultural and fishing communities, services to handicapped children, early childhood education (nurseries and orphanages), education and labour services (urban areas), citizens' legal counselling visits to tuberculosis sanatoriums, missionary work, street campaign services, invitation of sister school students to Seoul, sending books to isolated islands, consolatory visits to sister military units, helping unfortunate neighbors, and cultural education for the community.

Costs of higher education

Cost levels

A. Total allocation to higher education: Considering the increasing demand for advanced manpower needs upon industrial modernization and high economic growth, and considering the importance of higher education's role in the nation, we are convinced of the function of higher educational institutions. Therefore, both the national government and society need to establish a suitable financial system to enable higher educational institutions to efficiently fulfill their functions. Only then the environment can achieve efficiency and social accountability of education and research be nurtured. The financial situation of higher education institutions has been improved remarkably compared to the past but has not departed from its smallness. Private institutions in particular are not favored by government subsidies unlike national institutions.

The Ministry of Education's budget to finance national and public schools has been increasing in volume. As shown in Table 3.44, its ratio to GNP or to total government budget, which declined conspicuously in the 1970s, has been increasing in the 1980s.

Table 3.44 Overview of budget for education

(Unit: billion won)

Classification	*1970*	*1975*	*1980*	*1985*
GNP (A)	2,735.9	10,092.2	37,205.0	71,262.0
Government budget (B)	466.3	1,587.0	5,804.1	12,275.1
Ministry of Education budget (C)	78.5	228.0	1,099.2	2,491.7
Education tax (D)	–	–	–	316.0
C/A (%)	2.9	2.3	3.0	3.5
C/B (%)	17.6	14.4	19.0	20.3
C-D/B (%)	17.6	14.4	18.9	17.7

Source: The Economic Planning Board, *Major Economic indicators*, 1985.
The Ministry of Education, *Statistical Yearbook of Education*, 1980-198[illegible].

The total public cost of education spent through public accounting procedures, accounted for 6.5 per cent of the GNP in 1985. Of the public expenditure for education, colleges, and universities comprised 24.8 per cent and junior colleges accounted for 4.4 per cent.

The unit cost for education is a good base material to analyse the size of financial assistance necessary for educational activities. It is also a criterion which determines educational quality. Efficient use of educational funds is a necessary prerequisite, but trying to accomplish fundamental purposes of college education without proper educational investment has problems, too. It is meaningful in this sense to analyse the changing trends in educational cost per student.

According to Table 3.45, the educational cost per student in 1982 both current cost and constant cost increased compared to 1977. However both nominal and real costs decreased during 1982-1985 because of the rapid growth of the number of students.

To analyse by establishment in junior colleges, investments to national and public schools declined; in universities and colleges, investments to national institutions are smaller than that of private institutions. The constant cost in national and public universities and colleges is declining.

In volume, national and public institutions exhibit higher costs than private institutions. The difference becomes larger in junior colleges, and becomes smaller in universities and colleges. This reflects years of the government's investment policies made toward higher education. First, government investments to short-term colleges have been concentrated on national and public institutions. Second, in universities and colleges, measures taken to lessen the difference in tuition between national and private institutions have been effective. Third, in 1985, the unit cost of education decreased due to the rapid expansion of student body, which was brought about by the enforcement of graduation quota system in 1981.

Tuition fees show differences between various types of institutions and between fields of study. There are also considerable differences in the unit cost by field of study. There are needs to set tuition fees at appropriate level and to allocate adequate expenditure for each department.

Cost management

A. Revenues: Financial resources of higher education (resources for public expenditure in this case) are divided into government funds (payments by national treasury), funds paid by beneficiaries, and school corporation's funds paid by private school founders. Government funds and school corporation's funds are appropriated to the budget listed under school funds. Also included in this school fund are admission fees and tuition fees borne by beneficiaries. Therefore, the public cost of education in higher education is the sum of school funds, dues for PTA (school supporting organizations) paid by beneficiaries, lab work and practice fees, and students defense corps fees. In addition to these, there are

Table 3.45 Public expenditure for education per student

(unit: thousand won)

Classification		*1977*		*1982*		*1985*
		Current	*Constant (Index of increase)*	*Current*	*Constant (Index of increase)*	*Current (Index of increase)*
Junior colleges	Total	305.2	767.8 (1.00)	891.7	974.3 (1.27)	855.4 (1.11)
	National	357.5	899.4 (1.00)	1,353.8	1,479.3 (1.64)	1,323.9 (1.47)
	Private	288.8	726.6 (1.00)	813.3	888.7 (1.22)	806.6 (1.11)
Colleges and universities	Total	439.4	1,105.4 (1.00)	1,331.7	1,455.1 (1.32)	1,216.5 (1.10)
	National	561.6	1,412.9 (1.00)	1,400.8	1,530.6 (1.08)	1,250.7 (0.89)
	Private	391.3	984.4 (1.00)	1,306.1	1,427.1 (1.45)	1,203.6 (1.22)

overseas loans and aids intended for educational development and facilities and equipment replacement and improvement, but they are not considered as current revenues.

As for the trends of compositional ratio by financial sources, governmental and school corporate payments have increased, while student payments have been on the gradual decrease. In 1979, more than ten per cent of the financial resources were paid by the government in national universities and colleges; in private institutions more than 85 per cent was paid by students. In junior colleges, governmental payments decreased and student payments increased. In universities and colleges, in contrasts, governmental payments increased and students payments decreased. But compared to foreign countries, we have smaller rate of payments by government and school corporations and a bigger rate of payments by students.

The school corporation's allotment of public educational costs is divided into the school corporation funds and private school's school fund. But the school corporation budget is mainly for the operation of the school foundation, and the transferred funds from the corporation, which is counted as an influx to the private school's school fund, which is very small in amount. To see the status of itemized composition of revenues of private higher educational institutions, 82-86 per cent of the total revenues come from tuitions and fees paid by students. That is, private higher education institutions depend mostly on student-paying admission fees, tuitions, examination and other fees for finance. The financial share borne by the founder of the school foundation accounts for a mere 10-12 per cent of the total revenues. Table 3.46 shows the breakdown of revenues of 14 sample private institutions of higher education.

As indicated in the table, in 1984, the highest percentage among the revenues of private universities and colleges is tuitions with 80.18 per cent of the total. With admission fees of 1.96 per cent and entrance examination and other fees of 0.88 per cent, the dependence on student payments is around 83 per cent.

In the case of open colleges, the general picture of financial resources are not available. But in the Kyunnggi Engineering Open College, student tuition for 1983 was 526,000 won (bachelor's degree) and 334,000 won (junior college). In 1983, the tuition of national universities was 836,000 won, and that of national and

Table 3.46 Revenues of 14 sample private institutions (1984)

(unit: thousand won)

Items	*Amount*	*Ratio*
Total	303,876,391	100.00
Admission fees	5,956,272	1.96
Tuition	243,656,146	80.18
Entrance examination fees	1,798,990	0.59
Miscellaneous fees	888,642	0.29
Transfer income	12,224,712	4.02
Donations & government subsidy	6,570,478	2.16
Property income	214,784	0.07
Research income	178,129	0.06
Other income	7,226,778	2.38
Investment capital	60,843	0.02
Proceeds from sale of fixed immaterial properities	1	–
Income from fixed liabilities	12,207,931	4.02
Income from reserve deposit fund	12,892,684	4.25
Others	1	–

public junior colleges was 514,000 won. This means that among the total budget of 4,790 million won, 45.6 was from student tuition fees, 49.7 from the national treasury, and 4.7 per cent from other sources. Situation analysis of other schools such as the Korea Air and Correspondence University and teachers' colleges is not possible due to lack of source materials and data.

To see the revenues from the school corporation item by item, revenues from basic property such as property income, business income, investment income and borrowed income has gradually increased since 1970 whereas donations have been on the decrease. As donations, which constituted a major income source in the past, decrease, the proportion of such incomes as, basic property income and borrowed income has relatively increased.

B. Allocation of financial resources: The expenditure of school educational costs are itemized as expenditures on: personnel, management and operation, research and scholarships, health and physical education, laboratory work, entrance examination management, student counselling and property build-up. Property build-up expenditure refers to expenditure on facilities, which is capital expenditure. When educational costs are divided into current expenditure and capital expenditure, current expenditure comprises personnel cost and operation cost while capital expenditure is expenses for facilities.

The analysis of expenditure by function is shown in Table 3.47. As for the trends in junior colleges, the personnel cost does not show much fluctuation; the ratio of operation cost drops; and the ratio of facilities cost grows. This is due to the rapid growth in facilities investment following the growth of student body since 1980. As for universities and colleges, the ratio of personnel cost is growing; the ratio of operation cost dropped and then rising; and the ratio of facilities cost rose and then declining. It is interpreted that such a trend has been brought about by a rapid increase in student population with the implementation of the graduation quota system in 1980. As the investment in facilities shows a decline, expenditure has been turned to operation and personnel expenses.

Table 3.47 Expenditure by type of institution

Year	*Type of institution*	*Current expenditure*		*Capital expenditure*
		Personnel expense	*Operating expense*	*Facilities expense*
1979	Junior colleges	41.8	45.9	12.4
	Colleges & universities	36.0	40.2	23.7
1980	Junior colleges	42.8	26.9	30.4
	Colleges and universities	36.1	28.8	35.0
1985	Junior colleges	42.8	30.8	26.4
	Colleges and universities	41.6	35.7	22.7

Source: Young-chul Kim and others, *Educational Investment Size, and Optimum Unit Cost*, 1985

There are considerable differences between national and private institutions in the composition of expenditure. In junior colleges, the ratio of personnel expenses are higher in national and public schools; the ratio of equipment and facilities is higher in private schools; and operation cost is similar in both. In universities and colleges, the ratio of personnel cost is higher in national and public schools; while the ratio of equipment cost is higher in private schools.

Table 3.48 Percentage distribution of educational expenditure (1985)

Type of institution	*By establishment*	*Current expenditure*		*Facilities*
		Personnel expenses	*Operating expenses*	
Junior colleges	National and public	46.6	30.6	22.8
	Private	42.1	30.8	27.1
Colleges and universities	National and public	52.5	28.1	19.4
	Private	37.3	38.7	24.0

At present, there are six open colleges in operation, but detailed statistics are not available on their financial conditions. The 1983 budget of Kyonggi Engineering Open Colleges was paid mostly through the national treasury and dues from the PTA. Distribution of expenditures is shown in Table 3.49. However, the expenditure on students is not included in the above table, and thus it is difficult to compare it with that of universities and colleges.

Table 3.49 Revenue and expenditure of Kyonggi Engineering Open College (1983)

(unit: million won)

Expenditure *Revenue*	*Personnel expenses*	*Miscellaneous expenses*	*Facilities*	*Total*
National treasury	1,600 (63.0)	440 (17.3)	500 (20.0)	2,540 (100.0)
Dues for school supporting organizations	980 (52.8)	880 (43.1)	76 (4.1)	1,856 (100.0)
Total	2,580 (58.7)	1,240 (28.2)	576 (13.1)	4,396 (100.0)

**Note:* The figures in parenthesis represent the percentage ratio.

With more detailed classification of higher education's expenditure, items with direct influence on educational quality are professors' salaries, research funds, and scholarships. In fact, there is not much difference in salaries among professors of different ranks. In the case of scholarships (including tuition waivers), both the number of scholarship recipients and per student benefits has increased, compared with the situation of ten years ago. The government strongly recommends universities and colleges to allocate 30 per cent of student tuitions as scholarships. Consequently universities and colleges are experiencing considerable difficulties. Though the amount of scholarships are on the increase, it is still very poor compared with per student tuition.

As for research expenditures of higher education institutions, universities and colleges use as research funds less than five per cent of the total funds raised by government, public organizations, private sectors, and foreign countries. Research funds invested into higher education institutions are excessively small compared to those invested in research institutes or business corporations.

Inter-relationships amongst equity, quality and costs

Higher educational policies in the 1980s have been in the direction of expansion of opportunities for higher education in response to increasing social demands for higher education. Some basic policies were established to realize the expansion of opportunities for higher education. First, the attempt has been made to introduce a life-long educational system. By furnishing night classes or seasonal classes to existing colleges, by opening bachelor's degree courses in the Air and Correspondence college, and by establishing open colleges, the opportunities for continued education were provided to industrial workers. Second, a graduation quota system was established to satisfy social demands for education. The system adjusted the number of admission to the number of graduation and admitted students within 130 per cent of graduation quotas, and expanded educational opportunities. Third, students' quality control was exercised through delayed advancement and exclusion from advancement. Students' academic activities were activated by forced exclusion of students with poor academic performance during the four to six years of enrolment. Fourth, we promoted the development of provincial colleges. Originally it was devised to restrain the influx of students to Seoul and the subsequent population concentration to the Seoul area. It contributed to a balanced growth in opportunities for higher education in provincial areas.

Such devices for the expansion of opportunities for higher education has led to the decline of educational quality. When the sub-systems of higher education are divided into human system, structural system, task system and assistance system, the expansion of the human system induces complementary changes in other systems. Despite the fact that the number of students has doubled in 1985 compared to the number in 1980, quantitative growth of professors and facilities have not been sufficient enough to accommodate them. Consequently, the student faculty ratio has doubled. The lack of facilities and the decreased faculty/student ratio has combined to lead to the qualitative decline in higher education.

Despite these problems there were some accomplishments. First, these policies contributed to meeting the social demand for higher education, if not fully. With a 30 per cent rate of student enrolment among the optimal age population, which is higher than in other countries, Korea's higher education satisfies social demand in comparison with international standards. Second, the policies promoted balanced benefit of higher education. They, especially, provided the opportunities for higher education to lower income individuals who could not continue education because of financial difficulties, by furnishing bachelor's degree programme in Korea Air and Correspondence college or by establishing open colleges for industrial workers. They also provided master's degree programmes to employees by opening seasonal or night-time graduate schools. Third, they encouraged expansion of opportunities with more scholarships. The policies offered devices to transfer the amount of increased tuitions from the increased number of students with establishment of graduation quotas to scholarships. Consequently, the benefit of scholarships increased for those students from low income families with excellent academic performance, and contributed to a balanced offer of opportunities for higher education to lower income individuals.

Chapter Four

CASE STUDIES

Selection of institutions

Four-year universities constitute the majority of higher education. The universities are organized in such a way as to better carry out the important functions of teaching, research, and social services, in the number of departments, the number of full-time professors, the number of students, the area of school sites, the total amount of budgets, than other higher educational institutions such as colleges, junior colleges, the Air and Correspondence college, open colleges, and miscellaneous schools. There are 45 universities – 11 national and 34 private. Every province has a national university and in addition, one in Seoul and one in Busan. Of the private universities, 17 universities or half of the total, are located in Seoul, showing an over concentration in Seoul. Two universities in Seoul; Seoul National University (a national university) and Yonsei University (a private university) were selected as objects of the case studies for

Table 4.1 Overview of selected schools (1984)

Classification	*Seoul National University*	*Yonsei University*
Location	Seoul	Seoul
Establishment	National	Private
Year of Establishment	1946	1885
Number of departments	111	66
Number of Full-time faculty	1,145	732
Student enrolment		
Undergraduate	22,882	18,996
Graduate	5,555	4,791
School land area (1,000 m^2)	1,417.16	9,721.80
Settled accounts (thousand won)	37,408,213	60,762,518

comparative analysis. Yonsei University is about the same size as Seoul National University, is one of the oldest universities in Korea, and the quality of the students attending it is high. These two universities are the most prestigious institutions. They are also the leading universities with strong influence on the policies of other universities. Therefore, in carrying out the policies of higher education set by the Ministry of Education, the operational direction of these universities directly influence that of other universities. The comparative analysis of these two universities is thus of value.

Modes of data collection and research questions

Used in this case study are the materials collected each year from the universities and colleges for the compilation of the Statistical Yearbook of Education by the Ministry of Education and the materials from the Reports on Self-analysis of individual institutions designed for the evaluation of universities conducted by the Korean Council for University Education. Also used are the *Statistical Yearbook of Seoul National University* published every year by Seoul National University, the *Yonsei University Yearbook* published every year by Yonsei University, *Thirty Years of Seoul National University* published in 1976, and *One Hundred Years of Yonsei University* published in 1985.

As for the materials unavailable from these sources, efforts were made to obtain them through interviews with the people concerned in universities and colleges. These materials were utilized to resolve such research subjects as follows:

1. How have the two universities made efforts for realization of equity and what are the results?
2. How did these universities carry out plans for quality improvement and what were their accomplishments?
3. For the improvement of equity and quality, was the securement of financial sources appropriate and was the expenditure proper?

Interpretation of results

Equity

A. Access to opportunities

1. The system of college entrance examination: Both universities have made various efforts to smoothly carry out the graduation quota system, which has been in effect since 1981. To handle increased workload with precision and efficiency, both SNU and YU adopted computerized methods in the administration of student affairs such as course registration and scholastic records. However, since the problem of the graduation quota system itself was not solved, the Ministry of Education made an announcement on supplementary measures to the graduation quota system on August 25, 1983. The basic direction of the supplementary measures was, while maintaining the frame-work of the graduation quota system, to leave its practical management entirely to individual universities, enabling them to operate autonomously and flexibly without jeopardizing the academic atmosphere. Contents of the supplementary measures were: adjustment of forced drop-out rates by grade year; operation of delayed advancement to a higher grade; mitigation of the requirements for the completion of four-year courses; enforcement of a graduation qualifying examination for those who have completed four-year courses; adjustment of enrolment rate, etc. Subsequently, Yonsei University deleted the article concerning midway failures from school regulations and established a new regulation concerning delayed advancement to upper grades. Also in selecting freshment students in 1984, colleges of medicine, dentistry, and nursing lowered the admission to 105 per cent of their graduation quotas, and the College of Home Economics also lowered admission to 110 per cent of its graduation quotas.

On April 5, 1984, the Ministry of Education announced that the practice of autonomous adjustment of admissions, which was applied only to women's colleges and medical colleges, should be extended to all universities and colleges and the adjustment rates were left to the discretion of each university. Like most other universities, Seoul National University and Yonsei University lowered the rate of surplus admission. Immediately following this, the Ministry of Education ordered that each university allow opportunities for bachelor's degree qualifying examinations to the students admitted until 1984. As examined thus far, the graduation quota system, has undergone changes, and both Seoul National University and Yonsei University have positively accommodated those changes.

The entrance examination under the graduation quota system has directly influenced both Seoul National University and Yonsei University. Since only excellent students are usually concentrate on these universities, entrance competition rates of these two universities are lower than those of other universities. While the average admission rate of all universities in 1985 school year was 39.5 per cent, that of Seoul National University was 56.1 per cent and that of Yonsei University was 60.5 per cent. The status of applicants and the admissions by field of study is shown in Table 4.2.

As seen in the table, Seoul National's admission rate was 59.8 per cent in humanities and social sciences, 60.6 per cent in natural sciences, and 31.4 per cent in arts and physical education, showing a considerable difference between the various fields of study. In Yonsei University, the admission rate was 62.0 per cent in humanities and social sciences, 64.9 per cent in natural sciences, and 33.6 per cent in arts and physical education, showing characteristics between divisions similar to Seoul National University. In admission rates by field of study, Yonsei University shows higher rates than Seoul National University. When comparison is made on the marks of the Scholastic Achievement Examination for College Entrance (perfect score: 340), which comprises the largest proportion in the college entrance examination, Seoul National University is about 30 points higher than Yonsei University. The average scores of the Scholastic Achievement Examination of the students admitted to 44 universities in 1984 were 232.0 in humanities and social sciences, 219.1 in natural sciences, and 173.4 in arts and physical education. Assuming that there is not much difference between the scores of 1984 and those of 1985, it is evident that the most competent students concentrated on Seoul National University. According to the findings of research conducted in 1984 on the average scores of the Scholastic Achievement Examination of each university's new students, Seoul National University was the highest and Yonsei University was next. The fact that the difference of points between these two top universities is wide implies that the quality of colleges and universities varies greatly from one institution to the other.

Table 4.2 Status of applicants and admissions by field of study (1985)

Classification	*Seoul National University*						*Yonsei University*					
	Human-ities and social sciences	*Natural science*	*Arts and physical education*			*Total*	*Human-ities and social sciences*	*Natural science*	*Arts and physical education*			*Total*
Applicants (A)	3,421	4,695		1,359		9,475	3,929	3,414		756		8,099
Admissions (B)	2,047	2,845		427		5,319	2,433	2,216		254		4,903
$\frac{B}{A}$	59.84	60.60		31.42		56.14	61.92	64.91		33.60		60.54
Percentage allocation of marks for entrance examination			*Fine arts*	*Music*	*Physical education*				*Fine arts*	*Music*	*Physical education*	
SAECE score	67.3	67.3	30.0	20.0	31.0	–	70.0	70.0	–	20.0	40.0	–
High school academic record	32.7	32.7	30.0	30.0	30.4	–	30.0	30.0	–	30.0	30.0	–
practical skill	–	–	40.0	50.0	38.6	–	–	–	–	50.0	30.0	–
Total	100.0	100.0	100.0	100.0	100.0	–	100.0	100.0	–	100.0	100.0	–
ASECE average score	300.93	292.35		225.54		–	273	265	–	196	–	–

Rates of competition for admission to Seoul National University and Yonsei University do not show much fluctuation every year. It is because the scores of the Scholastic Achievement Examination for College Entrance and the academic scores made in high school years are individually fixed, and the students tend to submit applications realizing they will be accepted on these merits. However, in their minds, almost all students wish to enter Seoul National University or Yonsei University. In the case of Seoul National University, in 1980 which was a year before the implementation of graduation quota system was put into force, 5,319 were admitted among 9,475 applicants, with a 56.1 per cent admission rate. That is, despite the fact that the number of applicants decreased, the admission rate was higher due to the expansion of admission numbers. In the case of Yonsei University, 4,903 students were admitted among 8,099 applicants in 1985, with a 60.5 per cent admission rate, a little higher than Seoul National University's admission rate of 56.1 per cent.

Demand for these universities becomes more evident in the rates of application and admission of repeating students (repeaters). Figures are not available in the case of Seoul National University, but as for Yonsei University, the rate of repeaters among the students admitted in 1986 was 29.2 per cent, a figure slightly higher than the overall nationwide rate.

2. *Scholarships:* In situations of scholarships grants and tuition exemption, there is a fundamental difference between national and private colleges and universities. The status of scholarships and tuition exemption of Seoul National University and Yonsei University is shown in the Table 4.3. On the whole, Seoul National University is larger than Yonsei University both in the amount of total scholarship grants and tuition exemption and the number of recipients. But per student amount is about 193,000 won in Seoul National University, while it is about 357,000 won in Yonsei University. This is because the exemption of the entire tuition and fees comprise 82.0 per cent in Yonsei University, while in Seoul National University, the tuition exemption and the exemption from dues for school supporting organizations accounts for 49.1 per cent and 16.8 per cent, respectively.

In Seoul National University, the amount has generally increased in 1985 compared to 1980, though there are differences among colleges both in the amount and the number of recipients. While

Table 4.3 Status of scholarships awarded and exemption of fees (1984)

Classification			*Seoul National University*		*Yonsei University*	
			Number of recipients	*Amount (in thousand won)*	*Number of recipients*	*Amount (in thousand won)*
Scholarship grants	Government		33	9,726	872	336,852
	State Autonomous bodies		–	–	4	2,024
	Private and others		1,977	690,617	777	417,404
	Total		2,010	700,343	1,653	756,280
Exemption of fees	Entire fees	Half	–	–	8,205	2,895,438
		Total	–	–	521	306,805
	Tuition fees	Half			331	46,469
		Total	12,267	1,800,452	654	257,405
	Dues for school supporting organizations	Half	–	–	314	65,808
		Total	4,207	2,356,784	–	–
	Entrance fees	Half	–	–	–	–
		Total	1,367	109,360	–	–
	Others		2,136	556,265	–	–
	Total		24,977	4,822,861	10,007	3,571,925

4,514 students, 30.8 per cent of the total enrolment of 14,640 received about 82,000 won per student in the first semester of 1980, 10,691 students, 45.0 per cent of the total enrolment of 23,771 received about 225,000 won per student in the first semester of 1985. When the price increase rate is taken into consideration it is difficult to say the size of per student benefit has grown sufficiently. The current level of benefits can not contribute substantially to reducing students' financial burden for education. In view of this, Seoul National University is undertaking efforts to develop ways to improve the situation.

B. Status of equity: Seoul National University is composed of 16 colleges, whereas, Yonsei University has 11 colleges. The kinds of colleges differ between the two universities, with Yonsei's colleges varying a little year by year. Also the number of students in each college differs at Yonsei University. These factors contribute to forming the characteristics of each university and thus deserve close analysis.

Due to the difficulty in collecting data, the figures of 1985 are not available. The status of the two universities in 1980 and 1984 is shown in Table 4.4.

Table 4.4 Distribution of students by college

Classification	*Seoul National University*				*Yonsei University*			
	1980		*1984*		*1980*		*1984*	
	Enrolment	*%*	*Enrolment*	*%*	*Enrolment*	*%*	*Enrolment*	*%*
Total	14,640	100	23,685	100	10,231	100	19,917	100
College of Humanities	847	5.8	2,328	9.8	1,389	13.6	2,841	14.3
College of Social Sciences	1,096	7.5	2,713	11.5	1,041	10.2	1,314	6.6
College of Natural Sciences	1,583	10.8	2,728	11.5	1,081	17.6	2,239	11.2
College of Business Administration	457	3.1	1,153	4.9	1,295	12.7	3,052	15.3
College of Engineering	3,417	23.3	3,939	16.6	2,196	21.5	3,434	17.2
College of Agriculture	1,597	10.9	2,481	10.5	–	–	–	–
College of Home Economics	358	2.4	645	2.7	489	4.8	689	3.5
College of Fine Arts	285	1.9	675	2.8	–	–	–	–
College of Laws	772	5.3	1,403	5.9	–	–	754	3.8
College of Education	1,765	12.1	2,473	10.4	–	–	661	3.3
College of Veterinary Medicine	194	1.3	248	1.0	–	–	–	–
College of Pharmacy	339	2.3	382	1.6	–	–	–	–
College of Music	515	3.5	927	3.9	421	4.1	704	3.5
College of Medicine	709	4.8	798	3.4	518 (375)	8.7	641 (2356)	15.0
College of Dentistry	431	2.9	429	1.8	250	2.4	328	1.6
College of Theology	–	–	–	–	142	1.4	447	2.2
College of Nursing	275	1.9	363	1.5	314	3.1	457	2.3

Note: The figures represent students enrolled. The numbers in parenthesis refer to students enrolled at Wonju campus of Yonsei University. In Seoul National University, department of nursing is under college of Medicine.

Yonsei University is a little smaller in size than Seoul National University, and has fewer colleges. In 1980, Yonsei University did not have Colleges of Agriculture, Arts, Law, Education, Veterinary Medicine, and Pharmacology. And until 1985, among these colleges, only Colleges of Law and Education have been established. Meanwhile, Seoul National University, does not have College of Theology. For years both Seoul National University and Yonsei University have made changes in student size amongst colleges in their universities. Seoul National University has given priority to Colleges of Engineering and Education. Yonsei University enlarged its Colleges of Social Sciences, Natural Sciences, and Engineering. In student numbers, the College of Engineering in both universities constitute the largest proportion, which is indicative of the characteristics of the industrial structure and labour market. The main difference between these two universities in 1984 is the contrast in the weight of Colleges of Humanities, Social Sciences, Business Administration, Education and Medicine. This contrast indicates each university's characteristics and at the same time implies the difference in components (especially students).

The number of enrolment by field of study as of 1985 is presented in Table 4.5. As seen in the table, students of natural sciences are 45.3 per cent in Seoul National University and 34.6 per cent in Yonsei University. Students of social sciences in Yonsei University are 31.5 per cent, much higher than 17.4 per cent in Seoul National University. Students of humanities are also higher at Yonsei University with 14.7 per cent, compared with 9.7 per cent of Seoul National University. On the contrary, the rate of students of education is 10.8 per cent in Seoul National University, which is higher than 3.7 per cent of Yonsei University. As seen, Seoul National University and Yonsei University represent the university community, but academically speaking, they tend to pursue unique directions. The field of natural sciences, which demand high educational costs leans to national universities financed by the national government, whereas, the fields of humanities and social sciences, which demand less educational costs, tend to be given priority by private colleges and universities. Such a distribution of fields of study results from both government policies and school policies to balance school finances.

Table 4.5 Overview of students (1985)

Classification	*Seoul National University*			*Yonsei University*		
	Male	*Female*	*Total*	*Male*	*Female*	*Total*
Humanities	1,684 (9.2)	621 (11.2)	2,305 (9.7)	1,241 (9.6)	1,378 (28.0)	2,619 (14.7)
Social sciences	3,815 (20.9)	324 (5.9)	4,139 (17.4)	5,008 (38.8)	617 (12.5)	5,625 (31.5)
Natural sciences	9,105 (50.0)	1,661 (30.0)	10,766 (45.3)	4,770 (30.0)	1,403 (28.5)	6,173 (34.6)
Arts and physical education	302 (1.7)	677 (12.2)	979 (4.1)	175 (1.4)	529 (10.7)	704 (4.0)
Medicine and pharmacy	2,014 (18.1)	1,004 (18.1)	3,118 (12.7)	1,271 (9.9)	778 (15.8)	2,049 (11.5)
Education	1,308 (7.2)	1,256 (22.7)	2,564 (10.8)	445 (3.5)	223 (4.5)	668 (3.7)
Total	18,228 (100.0)	5,543 (100.0)	23,771 (100.0)	12,910 (100.0)	4,928 (100.0)	17,838 (100.0)

Note: Numbers in parenthesis represent percentage.

The characteristics of students of Seoul National University and Yonsei University can be analysed in two aspects: distribution of students by region, age, and sex; distribution of students by parents' occupation and educational background. Also the equity of opportunities can be handled from the aspects of distribution by region and sex. In dealing with these aspects, Yonsei University could not be handled in detail due to difficulties in collecting data, and thus the analysis is made mostly with Seoul National University.

The distribution of students of Seoul National University by native province is presented in Table 4.6. On the whole, due to the growth of the student body by the implementation of graduation quota system, the rate of student numbers among the total population has increased. By native province, the largest number of students are from Seoul; but in the composition ratio, the students from Seoul compiled 29.7 per cent among the total students in 1985, showing a decrease from 32.9 per cent of 1980. But, on the other hand, the rates of students from Kyonggi, Jeonbuk, and Jeju has increased. The students from Jeju recorded especially high rates against each region's population. In contrast, the students from Kyonggi province showed the lowest rate against the region's population. This is because this province is adjacent to Seoul, and as a result many excellent students have already moved into Seoul before they enter college. Though there are some differences among provinces in distribution of students of Seoul National University, it is not because of certain restrictive elements working against equity of opportunities, but because a completely free competition system is provided in the high school scores and college entrance examinations.

Table 4.6 Number of students by native province

Classification	*1980*		*1985*	
	Number of students	*Population (thousand)*	*Number of students*	*Population (thousand)*
Total	14,640 (100.0)	37,436 (100.0)	23,771 (100.0)	40,467 (100.0)
Seoul	4,814 (32.9)	8,351 (22.3)	7,047 (29.7)	9,646 (29.7)
Busan	901 (6.2)	3,157 (8.4)	1,570 (6.6)	3,517 (14.8)
Kyonggi	1,156 (7.9)	4,930 (13.2)	2,146 (9.0)	6,181 (26.0)
Kangwon	548 (3.7)	1,790 (4.7)	941 (4.0)	1,726 (7.3)
Chungbuk	632 (4.3)	1,423 (3.8)	924 (3.9)	1,391 (5.9)
Chungnam	1,075 (7.3)	2,955 (7.9)	1,655 (7.0)	3,001 (12.6)
Jeonbuk	914 (6.2)	2,287 (6.1)	1,721 (7.2)	2,202 (9.3)
Jeonnam	1,015 (6.9)	3,779 (10.1)	1,996 (8.4)	3,748 (15.8)
Kyongbuk	1,816 (12.4)	4,952 (13.2)	2,724 (11.5)	5,044 (21.2)
Kyongnam	1,592 (10.9)	3,320 (8.9)	2,523 (10.6)	3,519 (14.8)
Jeju	164 (1.1)	295 (0.8)	468 (2.0)	492 (1.2)
Foreign countries	13 (0.1)	197 (0.5)	56 (0.2)	– –

Note: Numbers in parenthesis represent percentage.

Students' distribution by age and sex of Seoul National University and Yonsei University in 1985 is presented in Table 4.7. In distribution of students by age, students aged 22 and below constitute 84.9 per cent in Seoul National University, and 81.3 per cent in Yonsei University. The rate of student aged 18 and below is much higher in Seoul National University than in Yonsei University. Among female students, students aged 22 and below account for 94.0 per cent in Seoul National University and 93.9 per cent in

Table 4.7 Number of students by age

Classification		*18 and below*	*19*	*20*	*21*	*22*	*23*	*24*	*25*	*26 and above*	*Total*
Seoul National University	Male	3,183 (12.4)	3,155 (12.2)	3,938 (15.3)	3,955 (15.4)	2,387 (9.3)	1,483 (5.8)	873 (3.4)	554 (2.2)	661 (2.6)	20,189 (78.4)
	Female	730 (2.8)	893 (3.5)	1,348 (5.2)	1,370 (5.3)	901 (3.5)	209 (0.8)	75 (0.3)	29 (0.1)	25 (0.1)	5,580 (21.6)
	Total	3,913 (15.2)	4,048 (15.7)	5,286 (20.5)	5,325 (20.7)	3,288 (12.8)	1,692 (6.6)	948 (3.7)	583 (2.3)	686 (2.7)	25,769 (100.0)
Yonsei University	Male	765 (3.7)	2,091 (10.2)	3,201 (15.6)	3,316 (16.1)	2,596 (12.6)	1,257 (6.1)	801 (3.9)	666 (3.2)	836 (4.1)	15,529 (75.5)
	Female	419 (2.0)	784 (3.8)	1,254 (6.1)	1,396 (6.8)	886 (4.3)	167 (0.8)	75 (0.4)	17 (0.1)	42 (0.2)	5,040 (24.5)
	Total	1,184 (5.8)	2,875 (14.0)	4,455 (21.7)	4,712 (22.9)	3,482 (16.9)	1,424 (6.9)	876 (4.3)	683 (3.3)	878 (4.3)	20,569 (100.0)

Note: Numbers in parenthesis represent percentage.

Yonsei University. The tendency that female students are younger than male students has to do with the facts that male students have to fulfill their military obligation and the rate of repetition for college entrance is higher among male students. And in distribution by sex, female students comprise 21.6 per cent in Seoul National University and 24.5 per cent in Yonsei University. As shown, Yonsei University is slightly higher in female students. But though not presented in the table, the rate of female students at Seoul National University is much higher in 1985 compared with the 1980 rate when it stood at 12.0 per cent, with 1,862 female students among the total students of 14,640. If we do not consider the number of students who wish to enter college by sex, it is certain that the equity in opportunities between male and female students has somewhat improved.

The distribution of students by guardian's occupation of Seoul National University is undergoing a little change as seen in Table 4.8. The rate of guardians in agriculture and fisheries rose from 13.0 per cent in 1980 to 14.8 per cent in 1985, which is a remarkable increase

Table 4.8 Number of students at Seoul National University by guardian's occupation (1980, 1984)

Classification	*1980*		*1984*	
	Number of students	*Percentage*	*Number of students*	*Percentage*
Total enrolment	14,640	100	23,685	100
Agriculture and fisheries	1,913	13.0	3,494	14.7
Mining	284	1.9	162	0.7
Manufacturing	658	4.5	1,221	5.2
Electricity	299	2.0	393	1.7
Construction	534	3.7	971	4.1
Wholesale and retail trade	2,172	14.8	3,936	16.6
Transportation and communication	387	2.6	1,491	6.2
Financing and business services	716	4.9	1,119	4.7
Services	2,891	19.7	3,819	16.1
Non classification	4,777	32.6	7,079	29.9

considering that the number of people engaged in agriculture and fisheries drops every year. The rate of guardians in transportation and communication rose from 2.6 per cent to 6.2 per cent; the rate of guardians in finance and business services, and in wholesale and retail trade increased a little; and the rate of guardians in services and mining also showed a little reduction.

The number of students of Seoul National University by guardian's school career is presented in Table 4.9. Compared with 1980, guardians, educational background became higher in 1985. Guardians who graduated from graduate schools increased from 4.0 per cent in 1980 to 6.4 per cent in 1985, guardians who left graduate schools without graduation increased from 0.3 per cent to 0.6 per cent, parents with a high school education or more education increased from 68.2 per cent to 72.1 per cent, whereas, parents with no formal education dropped from 5.4 per cent to 2.4 per cent.

Table 4.9 Number of students at Seoul National University by guardian's school career (1980, 1985)

	1980		*1985*	
Classification	*Number of students*	*Percentage*	*Number of students*	*Percentage*
Total enrolment	14,640	100.0	23,771	100.0
Graduate school graduate	591	4.0	1,510	6.4
Leave graduate school without graduation	40	0.3	134	0.6
University graduate	5,213	35.6	8,284	34.8
Leave university without graduation	385	2.6	466	2.0
High school graduate	3,766	25.7	6,706	28.2
Leave high school without graduation	104	0.7	100	0.5
Middle school graduate	1,721	11.8	2,820	11.9
Leave middle school without graduation	161	1.1	80	0.3
Primary school graduate	1,819	12.4	2,948	12.4
Leave primary school without graduation	43	0.3	149	0.6
Uneducated	797	5.4	564	2.4

As illustrated, the educational background of guardians of the students of Seoul National University becomes higher with the passage of time.

C. *Realization of opportunities for higher education:* There are various elements influencing employment of college graduates such as economy fluctuation, population size, labour market, business structure, number of college graduates, and so on. These elements, however, do not have much effect on graduates of both Seoul National University and Yonsei University compared with the graduates of other colleges and universities. The fundamental reason for this is that the demand for graduates of these two universities is great due to their well-known high academic standards and quality.

The future courses that the graduates of Seoul National University and Yonsei University in 1985 have taken are presented in Table 4.10. The employment rate as of April 1, 1985 stood at 40.3 per cent in the case of Seoul National University graduates and 40.6 per cent among Yonsei University graduates. In Seoul National University, though not presented in the table, the employment rate as of April 1, 1979, was 43.0 per cent (1,345 out of 3,126 graduates). Thus the employment rate in 1985 dropped. The rate of graduates who sought advanced study increased from 32.0 per cent in 1979 to 38.1 per cent in 1985. Compared with the rate of advancement to graduate schools among Yonsei University graduates, which remains at 23.8 per cent, the rate of advancement to graduate schools among Seoul National University graduates is higher and continues to increase. Such a tendency seems to be related to Seoul National University's policy to develop itself into a graduate school-centered university. By field of study, the highest employment rate is recorded by graduates of the college of education (64.2 per cent) in Seoul National University, and by colleges of medicine and pharmacy (66.1 per cent) in Yonsei University. The high rate of employment among graduates of the college of education of Seoul National University is attributable to the fact that they are guaranteed employment under the educational policy to give top priority to graduates of national colleges of education in employment as a teacher. In the case of Yonsei University, the employment rate of graduates of the colleges of Medicine and Pharmacy is high due to these colleges' reputation. The field of study showing much difference in employment rate between the two universities is arts

Table 4.10. Status of employment of graduates (as of April 1, 1985)

	Seoul National University					*Yonsei University*				
Classification	*Number of graduates*	*Study*	*Employed*	*Military services*	*unknown*	*Number of graduates*	*Study*	*Employed*	*Military services*	*unknown*
Humanities	387 (100.0)	161 (41.6)	106 (27.4)	67 (17.3)	53 (13.7)	483 (100.0)	121 (25.1)	143 (29.6)	49 (10.1)	170 (35.2)
Social sciences	1,015 (100.0)	419 (41.3)	339 (33.4)	140 (13.8)	117 (11.5)	1,060 (100.0)	309 (29.2)	432 (40.8)	242 (22.8)	77 (7.3)
Natural sciences	1,798 (100.0)	882 (49.1)	643 (35.8)	116 (6.5)	157 (8.7)	1,198 (100.0)	339 (28.3)	502 (41.9)	145 (12.1)	212 (17.7)
Arts and physical education	339 (100.0)	77 (22.7)	160 (47.2)	15 (4.4)	87 (25.7)	146 (100.0)	1 (0.7)	25 (17.1)	– (–)	120 (82.2)
Medicine and pharmacy	475 (100.0)	67 (14.1)	267 (56.2)	123 (25.9)	18 (3.8)	307 (100.0)	4 (1.3)	203 (66.1)	63 (20.5)	37 (12.1)
Education	438 (100.0)	91 (20.8)	281 (64.2)	45 (10.3)	21 (4.8)	129 (100.0)	16 (12.4)	44 (34.1)	26 (20.2)	43 (33.3)
Total	4,452 (100.0)	1,697 (38.1)	1,796 (40.3)	506 (11.4)	453 (10.2)	3,323 (100.0)	790 (23.8)	1,349 (40.6)	525 (15.8)	659 (19.8)

and physical education with 47.2 per cent in Seoul National University and 17.1 per cent in Yonsei University.

Distribution of the graduates of Seoul National University and Yonsei University by occupation is shown in Table 4.11. The occupation with highest employment rate is the professional and technical area with 59.3 in Seoul National University and 53.7 per cent in Yonsei University. The main difference between the two universities is shown in the rates of employment in the administrative and service fields. The employment rate in the administration area is 26.3 per cent in Yonsei University and 7.9 in Seoul National University. On the contrary, the employment rate in the service area is 13.3 per cent in Seoul National University and 2.0 per cent in Yonsei University.

Table 4.11 Employment by occupation

Classification	*Seoul National University*		*Yonsei University*	
	Employed	*Per cent*	*Employed*	*Per cent*
Total	1,709	100.0	1,349	100.0
Professional and technical	1,014	59.3	725	53.7
Administrative and Managerial	74	4.3	54	4.0
Clerical	135	7.9	355	26.3
Sales	21	1.2	29	2.1
Service	228	13.3	27	2.0
Agriculture, animal science forestry and fisheries	21	1.2	1	0.1
Production	48	2.8	17	1.3
Military	87	5.1	50	3.7
Others	168	9.8	91	6.7

The difficulty experienced by universities every year in relation to the employment of graduates led them to undertake more positive measures to solve job-related problems. In Yonsei University, job-related work is handled under the department of Supervision and Student Welfare. The department has furnished job public relations section in the Office of Student Affairs since 1980. The section is equipped with corporate P.R. materials, corporate annual reports, catalogues of corporate research and questions and expositions of employment examinations. The university also established an employment information office in 1981. As stated hereinbefore, the rate of advancement to graduate schools among Yonsei University graduates has grown from 15 per cent in 1975, to 19 per cent in 1979, 22 per cent in 1980, 23 per cent in 1982, and further to 27 per cent in 1983. This has been brought about by the combination of the educational policy to pursue graduate school-centered education, the business community demanding a postgraduate educational background, and the difficulty in searching for a job among college graduates during economic slumps.

There is no concrete survey or research on how a leave of absence influences the quality of education in Seoul National University and Yonsei University. Neither is there research or survey on the reason for the leave of absence or the academic performance after the resumption of study. In many cases leave of absence among male students is due to their fulfillment of their military obligation. There are also instances both among male and female students to ask for a leave of absence to temporarily avoid being dropped under the graduation quota system. The status of students' leave of absence in Seoul National University and Yonsei University is shown in Table 4.12. Generally Yonsei University's rate of leave of absence is twice as high as Seoul National University's regardless of school years. The

Table 4.12. Leave of absence

	Classification	*1st semester, 1984*			*1st semester, 1985*		
		Male	*Female*	*Total*	*Male*	*Female*	*Total*
Seoul National University	**Students enrolled(A)**	20,335	5,182	25,517	20,189	5,580	25,769
	Leave of absence (B)	1,801	31	1,832	1,961	37	1,998
	$\frac{B}{A}$ (%)	8.86	0.60	7.18	9.71	0.66	7.75
Yonsei University	**Students enrolled(A)**	17,444	5,297	22,741	18,242	5,550	23,792
	Leave of absence(B)	2,726	98	2,824	3,317	134	3,451
	$\frac{B}{A}$ (%)	15.63	1.85	12.42	18.18	2.41	14.50

main reason for this is perhaps that the tuition of Yonsei University, which is a private institution is much higher than that of Seoul National University, a national university. Male students' rate of leave of absence in both universities is much higher than that of female students. This is because male students must fulfill their military obligation.

Quality

A. Determinants of quality in terms of inputs

1. Conditions of professors: The ratio of professors per student, which is regarded as a factor of utmost importance for the proper performance of a professor's academic activity, is increasing both in Seoul National University and Yonsei University as in other universities. The status of the increase in the ratio is presented in Table 4.13. Seoul National University and Yonsei University have relatively smaller number of students per professor compared with other universities. But since 1980, professor/student ratios have increased greatly due to the enforcement of the graduation quota system, which resulted in the expansion of the student body unaccompanied by the comparable growth in the number of faculty members. In Yonsei University the increase has been as much as 12.3 students per professor, thus making the conditions of professors worse than those in Seoul National University.

The rate of securing full-time teaching staff, also influences the efficiency of teaching and learning activities. The quantitative index of securing full-time professors does not necessarily guarantee the qualitative improvement of academic activities, but is the minimum criteria for maintaining qualitative excellence.

Table 4.13. Per professor student

Classification	*1980*			*1985*		
	Number of Faculty	*student enrolment*	*per professor student*	*Number of Faculty*	*student enrolment*	*per professor student*
Seoul National University	999	14,640	14.7	1,196	25,769	21.5
Yonsei University	544	10,231	18.8	764	23,792	31.1

Table 4.14 indicates the status of the full-time teaching staff in Seoul National University and Yonsei University in 1985. The ratio of full-time teaching staff against legal requirements is 69.4 per cent in Seoul National University and 70.1 per cent in Yonsei University. These figures are a little higher than the national average of 67.9 per cent. The rate of part-time instructors is 63.0 per cent of the full-time staff in Seoul National University and 78.3 per cent in Yonsei University. These rates imply that there is the need to re-examine the legally required number of full-time professors.

Table 4.14. Number of full-time teaching staff (1985)

Classification	*Legal requirement (A)*	*Full-time teaching staff*			$\frac{B}{A}$	*Part-time instructors*
		Male	*Female*	*Total (B)*		
Seoul National University	1,656	1,074	75	1,149	69.4	677
Yonsei University	1,090	677	87	764	70.1	598

Ph. D degrees and years of teaching experience are objective indexes of the quality of professors. Table 4.15 shows the number of faculty members of Seoul National University and Yonsei University by degrees awarded as of 1985. Generally, Seoul National University has more professors with doctor's degree than Yonsei University, whereas Yonsei University has more professors with master's degree or less than Seoul National University. As for Seoul National University, though not presented in the table, the rate of faculty members with doctor's degree increased in 1985 from 1980. That is, the rate of professor with doctor's degree, which was 71.0 per cent in 1980, rose to 79.0 per cent in 1985. The trend in the increase of professors with doctor's degree will continue in both Seoul National University and Yonsei University because these two universities, like many other universities, in principle do not qualify those without doctor's degree for a position on the faculty when selecting new faculty members. The increase in the teaching staff with doctor's degree every year is also due to the influence of such qualification regulations. However, it is true that the present system which determines the quality of professors by whether he or she possesses doctor's degree is criticized.

Table 4.15. Faculty members by degree awarded

Classification	*Number of Faculty members*	*Doctors*	*Masters*	*Bachelors and below*
Seoul National University	1,196 (100.0)	953 (79.7)	186 (15.6)	57 (4.8)
Yonsei University	764 (100.0)	519 (67.9)	177 (23.2)	68 (8.9)

Note: Numbers in parenthesis represent percentage.

The status of the teaching staff of Seoul National University and Yonsei University by teaching experience is shown in Table 4.16.

Faculty members of Seoul National University have more teaching experience than Yonsei University professors. The rate of professors with less than 20 years of teaching experience is 48.7 per cent in Seoul National University and 65.5 per cent in Yonsei University. In relation to this, the rate of professors with less than five years of teaching experience is 28.7 per cent in Yonsei University and 0 per cent in Seoul National University. This does not mean that Seoul National University has not recruited professors in the past five years, but it means that the university appointed as professors those with more years of teaching experience. By 1985 standard, the number of professors in Seoul National University has been appointed during the past five years was 197. In contrast, Yonsei University does not put as much emphasis on years of teaching experience as Seoul National University does in the qualification for its faculty members.

2. *Equipment and facilities:* Items concerning equipment and facilities are prescribed in detail on the decree on the criteria for the establishment of colleges and universities. However, comparative study on the facilities of Seoul National University and Yonsei University based on the decree is not available. Such being the case, data on school buildings by structure and by use, and allocation of land by use in the years of 1980 and 1985 will be presented for Seoul National University. In the case of Yonsei University, a few descriptions will be made without presenting separate tables.

Buildings by structure in the case of Seoul National University are presented in Table 4.17. During the five-year period, total building space has recorded a little increase. It is interesting that the

Table 4.16. Faculty members by teaching experience (1985)

Classification	*Total*	*5 years or less*	*5-10*	*11-15*	*16-20*	*21-25*	*26-30*	*31-35*	*36-40*	*41-45*
Seoul National University	1,196 (100.0)	–	76 (6.4)	238 (19.9)	268 (22.4)	226 (18.9)	190 (15.9)	140 (11.7)	58 (4.8)	–
Yonsei University	795 (100.0)	228 (28.7)	73 (9.2)	110 (13.8)	110 (13.8)	86 (10.8)	83 (10.4)	62 (7.8)	24 (3.0)	19 (2.4)

Note: Numbers in parenthesis represent percentage.

Table 4.17. Buildings of Seoul National University by structure

Classification	*Total*		*Wooden*		*Cement*		*Brick*		*Concrete*		*Others*	
	buildings	*Area*	*buildings*	*Area*	*buildings*	*Area*	*buildings*	*Area*	*buildings*	*Area*	*buildings*	*Area*
1980	393	388,320	63	8,817	16	1,061	75	30,039	238	348,034	1	366
1985	359	451,724	60	4,098	29	3,471	66	32,682	183	405,773	21	5,700

area of wooden structures decreased by more than half while the number and area of cement buildings increased more than three times and the area of concrete buildings has increased a little.

The status of buildings of Seoul National University by use is shown in Table 4.18. As shown during the past five years, the number of rooms decreased while the area increased a little. It is especially noteworthy that the number and area of libraries increased conspicuously. The number of research laboratories were 1,220, which was more than sufficient for the 1,149 full-time professors in 1985. The number and area of lecture rooms and laboratories and workshops did not increase greatly. Given the fact that the number of students doubled during the period, per student area of rooms decreased greatly.

Seoul National University's allocation of land by use is presented in Table 4.19. During the five-year period from 1980 to 1985 the entire land area did not change much. But the campus site decreased to almost one quarter while the experimental farms increased almost two times.

Just as Seoul National University went through many changes in facilities following the reform in the entrance examination system in the 1980s, Yonsei University also experienced many difficulties in facilities. To accommodate students which has increased twofold, Yonsei University promoted construction of new buildings and expansion of existing buildings. The humanities and science buildings were constructed in 1982, and 1984 respectively. Also expansion of the engineering building was begun in 1980, and expansion of the Wonju compus was completed in 1981. In addition, there were subsequent expansion of the college of music, Business Administration Hall, and the Student Defense Corps Building.

Summing it up then, while Seoul National University promoted expansion of facilities with future prospects in mind in accordance with its Campus Comprehensive plan, and thus did not show drastic changes, Yonsei University had to invest more in facilities compared to Seoul National University.

As for the situation of libraries, though the status of quantitative increase can not be grasped, the comparison between Seoul National University and Yonsei University can be made. The status of libraries

Table 4.18. Buildings of Seoul National University by use

(Unit : m²)

Classification	*Total*		*Office*		*Lecture rooms*		*Laboratory & workshop*		*Laboratory*		*Library*		*Others*	
	Rooms	*Area*	*Rooms*	*Area*	*Rooms*	*Area*	*Rooms*	*Area*	*Rooms*	*Area*	*Rooms*	*Area*	*Rooms*	*Area*
1980	4,380	388,320	445	22,323	380	34,801	1,074	73,603	1,175	32,324	75	20,843	1,231	204,424
1985	3,268	451,724	455	26,419	411	34,995	1,159	87,433	1,220	29,037	104	38,624	–	235,218

Table 4.19. Land allocation of Seoul National University by use

(Unit : m²)

Classification	*Total*	*Campus site*	*Athletic grounds*	*Experimental farms*	*Forest*	*Herbal gardens*	*Others*
1980	186,902,378	4,869,915	112,283	425,406	180,436,937	57,835	
1985	191,895,235	1,371,405	130,767	810,256	186,009,006	57,936	3,515,865

in both universities is presented in Table 4.20. The table shows the status of central libraries. The libraries established in individual colleges are not included. In total volumes of books, Seoul National University has twice the number of Yonsei University. There is little difference in the number of seats. The size of the library budget is larger in Yonsei University, indicating that Yonsei University is making a greater effort in the expansion of library equipment and facilities.

Table 4.20. Status of libraries

Classification		*Seoul National University*	*Yonsei University*
Libraries		1	1
Administrative staff		133	60
Seats		5,444	5,409
Books	Oriental	777,085	354,358
	Western	460,953	235,566
Newspapers	Domestic	18	566
	Foreign	20	67
Journals	Domestic Foreign	3,422	5,621
Library users		1,228,882	7,844,639
Library books read		1,533,108	278,861
Budget (won)		436,102,000	491,294,000

3. *Research funds:* As for the fund granted to professors for research, which is one of the important functions of a university, that in Seoul National University has been decreasing, while that in Yonsei University has been increasing. This is shown in Table 4.21. In Seoul National University, the number of research projects and research grants decreased, and the size of research grants per project were reduced from 3,000,000 won in 1980 to 2,582,000 won in 1984. In contrast, in Yonsei University, both the number of projects and the amount of research grants increased and the size of research grant per project also recorded an increase from 2,302,000 won in 1980 to 2,999,000 won in 1984. The result is, the entire volume of research funds of Seoul National University in 1980 was three times that of Yonsei University, but in 1984, it was reduced to less than twice that of Yonsei University. As a result, the difference in research

Table 4.21. Academic research funds for faculty

(Unit : thousand won)

Classification	*1980*				*1985*			
	Research projects	*On-campus funds*	*Off-campus funds*	*Total*	*Research projects*	*On-campus funds*	*Off-campus funds*	*Total*
Seoul National University	637	15,951	1,865,993	1,911,944 (3,004.4)	620	25,000	1,576,294	1,601,294 (2,582.7)
Yonsei University	241	104,860	450,024	554,884 (2,302.4)	275	296,541	528,118	824,659 (2,998.8)

Note: Numbers in parenthesis represent research funds per research project.

funds between the two universities has been reduced. In Yonsei University, the rate of on-campus research funds to total research funds increased from 18.9 per cent in 1980 to 36.0 per cent in 1984. In Seoul National University the rate also increased from 0.8 per cent in 1980 to 1.6 per cent in 1984. However, in the rate of on-campus research funds to total research funds, Seoul National University can not compare with Yonsei University as seen in Table 4.21. As for Seoul National University, the growth in on-campus research funds is minimal. Consequently, when off-campus research funds decreases, Seoul National University will be more adversely affected than Yonsei University in payment of research funds.

B. Determinants of quality in terms of instructional process

1. Appropriateness of academic guidance plan: The basis in upgrading the quality of classes in the appropriateness of an academic guidance plan. Major indexes of the plan are the number of weekly lecture hours, and the preparation and distribution of syllabus. Among these, weekly lecture hours of full-time staff are 10.4 in Seoul National University and 13.0 in Yonsei University, and the average lecture hours of 43 universities nationwide are 11.9 according to the 1985 report of self-analysis research for college evaluation. The present legal weekly contract hours are nine, therefore full-time teachers of both universities lecture slightly more than their legal teaching load requirement. Syllabuses are well prepared in both universities, but like many other universities, its distribution to students is not satisfactory.

2. Diversification of instructional methods: Diversification of instructional methods is meaningful if applied appropriately according to the course characteristics, the students' academic level, and professor's ability. Distribution of instructional methods of Seoul National University and Yonsei University is presented in Table 4.22. It would have been of more value in understanding the more detailed situation if it had been surveyed by field of study rather than by course. According to the table, Seoul National University and Yonsei university do not show much difference in instructional methods. That is, both universities utilize the combination of lecture, lecture and seminar, seminar and lab work and experiment, and lecture, seminar, lab work and practice.

Table 4.22. Distribution rate of instructional methods (1984)

Classification	*Lectures (A)*	*Seminars (B)*	*Lab and experiment (C)*	*A+B*	*A+C*	*B+C*	*A+B+C*	*Total*
Seoul National University	30.12	1.07	2.45	33.18	1.99	17.58	13.61	100.0
Yonsei University	27.42	0.71	0.71	30.73	1.18	26.00	13.24	100.0

3. *Methods of academic evaluation:* Methods of academic evaluation practised at universities are significant in the sense that they determine student's direction and method of study. There is a tendency that the simple evaluation method of the past undergoes an improvement phase through the positive attitude of professors, but there are not sufficient materials to evidence the trend by year. Table 4.23 shows how diverse methods of study evaluation are applied to actual evaluation. The rates of mid-term and final examinations in Seoul National University and Yonsei University are 56.47 per cent and 56.8 per cent respectively, with almost the same importance given to the examinations in both universities. The rate of quizzes in Yonsei University is 8.73 per cent, which is higher than 3.78 per cent of Seoul National University. This seems to be an indication that Yonsei University places stress on formative evaluation.

Table 4.23. Rate of academic evaluation (1984)

Classification	*quiz*	*assignments*	*presentation*	*midterm exam*	*final exam*	*presence*	*Total*
Seoul National University	3.78	22.09	9.44	23.76	32.71	8.21	100.00
Yonsei University	8.73	19.16	7.89	25.94	30.86	7.42	100.00

4. *Qualifications and promotion of professors:* The qualifications of a professor are evaluated on the basis of years of research conducted and years of teaching experience, and it is normally required that more than two research papers be published every two years. In addition to this, each university sets its own standards. But all universities set forth the qualification of professors in accordance

with the professor re-appointment system. It is noteworthy that, in the case of new appointments, both Seoul National University and Yonsei University impose in principle the possession of doctor's degree as a qualifying standard. The distribution of faculty members by degrees awarded was discussed earlier and thus the elaboration on that will be omitted here.

C. *Determinants of quality in terms of outputs*

1. Student grading system: In grading student's academic performances, Seoul National University and Yonsei University use such grade marks (permanent grade) as A (A+, Ao, A–), B (B+, Bo, B–), C (C+, Co, C–), D (D+, Do, D–), and F. In calculating credit points, both Seoul National University and Yonsei University count the differences between A– and B+, B– and C+, C– and D+ as 0.4, and the differences between the rest of the grade marks as 0.3. Seoul National University calculates A+ as 4.3, while Yonsei University calculates A+ as 5.3. F is considered 0 in both universities. In the distribution of grades, both universities recommend giving A's to the top 20 per cent in the class, B to 30 per cent, C to 40-50 per cent, but leave actual distribution of grade marks to the discretion of each professor.

2. Research activities of professors: The standard of professors' research activities can be understood by the number of publication of research papers per professor, the number of book publication per professor, and the kinds of collected essays published by the university.

There are two types of publication of research papers; domestic and overseas. By 1984 standard, during the past five years the number of research paper publication and the number of book publication in Seoul National University were 9.70 and 1.33, respectively, and in Yonsei University, 5.37 and 0.52, respectively. It follows from this that Seoul National University shows more than twice the research activities than that of Yonsei University.

The kinds of collected essays and the average publication cost per collected essays appear on Table 4.24. On the whole, Seoul National University published 61 essays, almost four-times as many as Yonsei University's. However, the average publication cost per essay of Yonsei University is almost twice as much as that of Seoul National University.

Table 4.24. Publication of collected essays (1984)

(Unit : thousand won)

Classification	*Head office*	*College*	*Graduate school*	*Department*	*Research institute*	*Others*	*Total*	*Per publication cost*
Seoul National University	–	10	4	7	24	16	61	2,983.9
Yonsei University	–	–	4	–	12	–	16	5,425.0

Overseas academic training is included in professors' research activities which is divided into university-sponsored and government-sponsored research trips. In the case of Yonsei University, the number of faculty members undergoing overseas training stood at 59 among 802 full-time staff as of April, 1985.

3. Social services: Social services performed by university communities are generally divided into three categories: social education, community services, and joint activities of industry and school.

Participation in community services by professors and students , the number of community service programmes and the average amount of assistance per programme are presented in Table 4.25. Professors participating in community services account for 18.3 per cent of the entire teaching staff of Seoul National University. The rate is 7.4 per cent higher among faculty members of Yonsei University. In the participation rate of students, however, Yonsei University shows a higher rate than Seoul National University. There is not much difference between the two universities in the number of community service programmes. The average amount of assistance per programme is 14,161,000 won in Yonsei University, some three times as much as Seoul National University's 4,141,000 won.

Table 4.25. Overview of community services

Classification	*Rate of participation*		*Programmes*	*Assistance per programme*
	Faculty	*Student*		
Seoul National University	18.34	3.45	5	4,141,000
Yonsei University	7.38	6.43	4	141,161,000

Social education programmes were opened in 1984, two in Seoul National University and eight in Yonsei University. Industry-school joint activities are mainly in the form of students' on-the-job training. The number of students who participated in the industry-school joint activities in 1984 was 1,525 in Seoul National University and 1,032 in Yonsei University.

Entering into the 1980s, Social Services activities began to take new phases among students' services. With the trend of students' services unfolded in the latter part of 1970s as their basis, students' services, sought new directions in social services. Rural area services, which departed from the dimension of the part that considered farmers as objects to educate and to enlighten, induced creative and voluntary participation of farmers as a subject, and increased students' understanding of the reality of rural society and of farmers, and brought out the importance of indirect assistance to rural areas. That is, a peculiar character of rural services as a student activity on the dimension of social movement emerged. This phenomenon applies to both Seoul National University and Yonsei University.

Costs

A. Cost levels: The educational cost per student by 1984 standard is 1,607,000 won in Seoul National University and 1,868,000 won in Yonsei University. In view of the fact that the educational cost per student in 1981 of Yonsei University was 1,257,000 won in 1981. The educational cost has not increased much when we consider consumer price increases.

Tuition fees are paid entirely by students in both universities. Student payments are divided into tuition fees, dues for school supporting organizations, and fees for student defense corps. In addition, new entrants should pay admission fees. The ratio between the tuition and dues for school supporting organizations cannot be calculated precisely, but in both Seoul National University and Yonsei University, dues for school supporting organizations constitute a larger share than tuition. Total annual payment per student in 1984 was 722,000 won in Seoul National University and 1,513,000 won in Yonsei University. In Yonsei University, the dependence on student payments among total educational costs is gradually decreasing thanks to the management policy to reduced beneficiary's share of burden. As a result, the rate of dependency on student payments was reduced from 85.8 per cent in 1981 to 74.2 per cent in 1984. Though the dependence on students dropped, student payments have increased almost every year in absolute amount. From the university's point of view, despite the fact that student payments have increased, financial revenues remained about the same in real value.

B. Cost management: In the 1980s, both Seoul National University and Yonsei University have made efforts to recruit superior professors, to improve faculty members' welfares, and to expand facilities to accommodate rapidly increased numbers of students in an effort to create a better academic environment.

Contents of expenditure in 1984 are shown in Table 4.26. Of the total costs, cost on personnel expenses is the highest in both Seoul National University and Yonsei University, with 52.7 per cent and 36.0 per cent, respectively. Yonsei University gave top priority in its financial policy to raising the salary of university personnel. But due to the pressure from facility expansion in the 1980s, the rate of personnel cost dropped a little. Seoul National University allocates 31.0 per cent to management and operation cost. Yonsei University,

Table 4.26. Detailed budget of expenditure and settled accounts (1984)

Classification	*Seoul National University*		*Yonsei University*	
	Total (in thousand won)	*Percentage*	*Total (in thousand won)*	*Percentage*
Personnel expenses	19,714,250	52.7	19,128,797	36.0
Managerial and operational Expenses	11,606,438	31.0	4,792,365	9.0
Student Expenses	347,788	0.9	7,593,083	14.3
Expenses for entrance examination	135,440	0.4	302,669	0.6
Research expenses	1,007,975	2.7	1,317,667	2.5
Expenses for purchase of fixed properties	3,102,139	8.3	6,752,102	12.7
Expenses for purchase of immaterial properties	–	–	–	–
Expenses for purchase of books	553,690	1.5	605,286	1.1
Expenses for repayment of fixed debt	–	–	–	–
Balance transferred	940,493	2.5	–	–
Deposit	–	–	–	–
Other expenses	–	–	11,379,166	21.4
Total	37,408,213	100.0	53,181,168	100.0

excluding miscellaneous expenses of 24 per cent, distributes 14.3 per cent in student affairs and 12.7 per cent in the purchase of fixed properties. One unique contrast is in the rates of student affairs expenses, where Seoul National University invests only 0.9 per cent, which is minimal compared to Yonsei University's 14.3 per cent.

More detailed analysis of personnel expenses is presented in Table 4.27. Yonsei University has higher rates of instructor fees and over-time instructor fees than Seoul National University. Though this seems to be related to the rate of utilization of instructors, it is largely attributable to the fact that the instruction fee of Yonsei University, which is private, is higher than that of Seoul National University.

Table 4.27. Detailed analysis of personnel expenditure (1984)

(unit : thousand won)

Classification	*Faculty*	*Administrative staff*	*Part-time instructor and Over-time*	*Total*
Seoul National University	14,129,706 (68.2)	5,855,584 (28.3)	736,935 (3.6)	20,722,225 (100.0)
Yonsei University	11,602,703 (65.3)	4,068,007 (22.9)	2,089,582 (11.8)	17,760,292 (100.0)

Note: Numbers in parenthesis represent percentage.

The revenues of university costs are composed mainly of student payments, transfers from the national treasury account, donations, transferred incomes, and loans. The composition rate varies depending on whether the institution is national or private. Itemized revenues of university costs of Seoul National University and Yonsei University are presented in Table 4.28. The rates of student payments in Seoul National University and Yonsei University are 45.0 per cent and 48.5 per cent, respectively. In Seoul National University, transfers from the national treasury account comprise 51.4 per cent, higher than the rate of student payments, which is 45.0 per cent. The combination of student payments and transfers from the national treasury account stands at 96.48, which is almost all of the school's revenue. In contrast, in Yonsei University, transfers from the national treasury account remains at 0.9 per cent, and the

Table 4.28. School revenues (1984)

Classification	*Seoul National University*		*Yonsei University*	
	Total (in thousand won)	*Percentage*	*Total (in thousand won)*	*Percentage*
Tuition fees	16,818,491	45.0	29,442,670	48.5
Commissions	319,694	0.9	867,421	1.4
Donations and transfers	–	–	7,175,045	11.8
Basic property income	136,761	0.4	76,411	0.1
Business income	76,877	0.2	–	–
Loan	–	–	4,947,618	8.1
Transferred incomes	490,768	1.3	175,548	0.3
Other incomes	334,501	0.9	17,677,627	29.1
National Treasury	19,231,121	51.4	400,178	0.7
Total	37,408,213	100.0	60,762,518	100.0

revenue depends mostly on student payments, donations and transfers, loans and other miscellaneous incomes. As seen, Yonsei University has no choice but to diversify its sources of income. In 1980 when Yonsei University began operating in the red, she established an extremely tight policy to redress the situation. Under the principle to accept the minimum expenses necessary for university management, Yonsei University cut 20-30 per cent of the expenses from 1983 standard in general items such as general management and operation cost, miscellaneous expenses, budget for supplies and tools, and endeavored to minimize the size of loans. The management objectives of Yonsei University are characterized by reduction of beneficiary's burden, optimal distribution of educational costs, improvement of faculty member's professionalism, upward utilization of profitable properties, and promotion of sound financial management of the university foundation.

Chapter Five

POLICIES, PROGRAMMES AND STRATEGIES

Research

This phase of the study will describe and analyse policies, programmes and stategies on equity, quality and cost in higher education over the last five to ten years. In the process, a special emphasis will be given to major policies and strategies implemented since the inauguration of the Fifth Republic. In addition, this section will also identify and discuss unintended outcomes which have appeared in the implementation of the policies, together with the evaluation of those policies.

With the birth of the Fifth Republic, there have been a series of revolutionary changes in educational policies which include measures for campus autonomy and normalization of school education. The basic direction of educational development was set at strengthening national spirit education, expansion of equal opportunities, efficient production of highly qualified manpower, qualitative improvement of education, balanced development of education and the accelerated educational development. And the policies concerning higher education emphasized reform and qualitative improvement of higher education, establishment of a life-long education system, promotion of social education and strengthening of science, technology and vocational education.

For the reform and qualitative improvement of education, the college entrance examination system underwent an across-the-board change and the opportunity of entrance was expanded. Efforts were made to enhance the quality of college education under the basic direction of campus autonomy and stabilization. To cope with the industrialized society through new knowledge and technology, the establishment of a life-long education system and expansion of social education have been pursued in such a way as to at once set new values for a highly developed society, and provide learning places.

Policies for science, technology and vocational education stressed the basic science and promotion of science and technology education to train qualified manpower to meet the demand of a technology-intensive industrial society.

In relation to equity, quality and cost of higher education, these policies will be discussed by identifying the educational system with a production mechanism having the cycle of input and output processes.

Equity of higher education includes equal opportunities for education and an equal education environment as an input process, and an output process where even quality or effects of education are provided to the society. In order to guarantee equal opportunities for higher education, a set of steps have been taken: elimination of overzealous private-tutoring for the entrance examination to bridge the gap between social classes; a drastic increase in the number of entrants to colleges by adopting graduation quota system; enlargement of opportunities for overseas studies; an increase of scholarships; the expansion of re-educational opportunities for working people by establishing undergraduate courses at Korea Air and Correspondence University, special programmes at junior colleges and professional graduate schools; promotion of regional and sexual equality in higher education, through control on the admission quotas for colleges in Seoul, and through the opening of women-related departments like pre-school education in junior colleges with its purpose aimed at a higher educated woman.

Second, for equity for educational environment, top priorities were given to teaching staff, facilities and finance. For qualitative and quantitative enhancement of teaching staff, the ratio of students per professor was lowered while the rate of doctoral degree holders among teaching staff increased. Legal standards were strictly applied to educational facilities. The engineering colleges at six national universities have been designated as specialized engineering colleges: mechanical engineering, electronics, chemical engineering, precision mechanics and metallurgy and construction and civil engineering. So far efforts were made to expand the facilities and to support the areas for the purpose of producing a more highly qualified engineer to meet such manpower requirements. For the recovery of confidence in private schools and improvement of educational environment, the foundation and the school administration were divided in management under the basic guidelines for reforming the management of private schools. This division was made to build a self-reliant administrative system. In financing support the tuition system was improved. Efforts for narrowing the gap of fees between national and private universities (colleges) were made by increasing the fees at the national universities (colleges) and on the other hand providing more support for the private schools suffering from chronic financial difficulties.

Third, educational efficiency is estimated by how effective and productive education is to the student in terms of education goals and social demand. It is directly connected with quality of education. In the light of the aims of college education, the management of higher education is broadly related to the quality of teaching output, research output and social services. And the quality of these outputs is differentiated by two critical variables; input and process. Rationalization of recruitment as a strategy for input variable was taken into account. For example, academic performance in high schools and the written examination were added to the screening process. Also the enhancement of the quality of the faculty and administrative staff was required. Expansion of training programmes for professors, and exchange programmes among universities (colleges), re-enforcement of financing academic research activities, subsidies for research and methods for specializing administrative staff have been pursued. As a process variable, internal-substantiality in higher education was stressed. Formation of educational curriculum and methods of managerial efficiency, diversification and scientification of teaching-learning technique were considered while co-operative relationships in exchanging studies between institutions of higher education was developed for improvement of provincial colleges. The practical curriculum and teaching materials were developed for the reform of junior colleges.

In order to secure the efficiency of higher education cost, effective management and financial sources were pursued on the basis of scientification and rationalization of educational administrative functions.

For the purpose of the study, the programmes and strategies intended to influence equity, quality or cost factors will be grouped under four headings as follows: structural solutions, administrative solutions, instructional solutions, resource solutions.

Classification of policies and programmes

Structural solutions: In connection with higher education and social education, Korea has a strategy to foster and reinforce open colleges and Air and Correspondence college as nonformal education. Both are intended to offer educational opportunities of the college or junior college level to those industrial workers who have completed or have had an interruption in school education. Their purpose is to upgrade manpower contributable to the development of society and the nation. The open colleges developed from a junior college, is a senior college which would make junior college graduates or those completing a comparable course obtain a bachelor's degree. There are six open colleges (three are public and the others are private) one each in Busan, Daejon, Kwangju, Daegu, Kunsan (established in 1984 and 1985), and in Seoul (established in 1981). The six open colleges, as the only national circular educational institution, have about 24,719 students as of 1985. The Air and Correspondence college was founded in March, 1972, as a course equivalent to that of a junior college. In February, 1981, it becomes a four-year national college offering normal bachelor's degree under Presidential Order No. 10,216 and has been playing the role of the first institution for life-long education. The Air and Correspondence college has admitted 153 thousand out of about 500 thousand applicants for the last ten years and produced about 33,000 graduates while the rate of drop-outs showed 70.1 per cent. In the undergraduate level, the ratio of graduates to those admitted is 1:4, or some 26 per cent of the total, while, 32 per cent of the total number of attendants at its two-year junior college course graduated. These two nonformal educational institutions were founded in line with the national policies for establishment of a democratic welfare state. Institutionally guaranteeing the opportunity of education to anyone who wants a life-long education, they have been pushing the emphasis to those who were neglected by such restrictions as regional, economic, age, the educational system and policies.

Secondly, what draws our attention is the implementation of the graduation quota system by which the student quota at schools has been readjusted. To cut down the intense competition in the entrance examinations and over-zealous private-tutoring, the reform has allowed institutions of higher education to admit freshman students up to 30 per cent over the graduation quota from 1981. Accordingly, the number of students in the higher education institutions increased from 600,416 as of 1980 to 947,334 in 1982 and 1,192,936 as of 1984 which respectively showed 157.78 per cent and 198.68 per cent increase as against those of 1980. The number of junior colleges dropped from 132 in 1981 to 122 in 1984, more colleges or universities have been established from 74 in 1978 to 97 in 1982 and 99 in 1984 while graduate schools were on a rapid rise from 90 through 169 to 186, respectively. Undergraduate and graduate schools showed an increase of 133.78 per cent and 206.67 per cent in 1984 over those in 1978.

Particularly, strategies to bridge the gap in education that existed between various regions and national and private institutions were implemented to promote the equity of higher education. By region, the number of students in Seoul out of the nation's total broke down to 15.3 per cent in junior colleges, 45.8 per cent in colleges (universities), and 71.8 per cent in graduate schools in 1979. But they respectively showed 16.8 per cent, 35.5 per cent and 70.6 per cent in 1984, a heavy concentration of students in the Capital City. In colleges and universities the ratio of students between Seoul and local areas, which was 45.8 per cent to 54.2 per cent in 1979, stood at 35.5 per cent to 64.5 per cent in 1984, largely due to efforts for regional equity and decentralization of the population. In addition, colleges and universities in Seoul were encouraged to move out to the countryside so that the 57 in Seoul among the 88 schools across the nation in 1980 were broadly cut down to 36 among the total of 99 in 1984. Meanwhile, efforts were made to establish departments closely related to the regional community at regional colleges and universities. Financial support including research subsidies of faculty members was also given to regional colleges. Besides, branch campuses of Seoul's private colleges and universities have been planned to set up for the equal development of colleges and universities between Seoul and the local areas. Accordingly, the branch campuses came to function as a regional college and served as an incentive for decentralization.

In order to balance the lop-sided dependence on private schools, maximum support has been given to public and national universities in local areas. However, the ratio of national and public schools to private ones moved from 20:65 in 1980, to 21:76 in 1983, and 21:78 in 1984.

For the expansion of night-time higher education opportunities, efforts have been made to increase the admission quota of evening classes. The rate of evening class was upgraded from 18 per cent in 1979 to 24 per cent in 1984.

To spur an inducement of higher educated women, women-related departments like pre-school education were opened at junior colleges.

As an input strategy for private schools, a reform in the private school management was embodied into a revision of the private school law in February, 1981. The revision asks the rights and responsibilities of the founder, the president and deans have obviously been distinguished so that unfair interference in the school administration by the founder can be avoided. To enhance the public nature of private schools, the founder, the spouse, and direct family members are denied the right to become president or dean of the institution. The founder has only the right to appoint the head of the school who will appoint members of the faculty and of other administrative staff. The head also takes charge of the planning, execution, and settlement of the budget. But taking into consideration the expansion of the private school's autonomy and the management's desire, regulations for inauguration of president or dean were eased in May, 1986. While under previous regulations, the direct members of the founder's family were unable to head the institution, the new regulations stipulate that the chairman of the school board of directors, his spouse, and direct family members are denied the right to head the school.

As a way to reform junior colleges, efforts were made to develop practical curriculum and teaching materials and to make those employed by businesses take part in the programme. To attain that goal, when employing a full-time teacher, the school authorities were instructed to reflect work experiences in industry from 30-70 per cent to 50-100 per cent. Also, development of the curriculum according to the needs of the regional community was induced to strengthen co-operative relations between junior college and the region. To provide more opportunities for obtaining jobs to junior college graduates, industries were encouraged to employ more graduates from junior colleges and to offer better treatment to them.

To promote healthy development of higher education by enhancing autonomy spirit in university management, the Korean Council for University Education was established in April, 1982. The aim of the Council is to maximize the function and research capability of colleges and universities, and to help each other discuss, research and mediate major issues regarding school affairs, finance and facilities. Besides, proposals regarding higher education are recommended to be reflected in the government policy. In order to expand the function of the body, efforts have been made to increase the government subsidy. Thus activities like evaluation of universities and graduate schools, research for financial improvement, training programmes for administrative staff, personnel exchange, co-ordination among colleges and universities have been boosted.

Meanwhile, there have been a series of developments to enhance teacher's quality in educational institutions for teachers. As a result, the previous 11 two-year teachers' colleges have been converted into four-year colleges of education from 1981 to 1984. In February of the same year, provisions for the education law, were passed on to schools. As a result, students of teachers' colleges are now required to earn a minimum of 140 credits for graduation, quite an increase from 83 credits, while such subjects as the principles of Korean pedagogy were newly offered.

Administrative solutions: For promoting efficiency of the quality, equity and cost of higher education, Korea has two administrative solutions in the direction of the financial and institutional strategies; the former is to let students study without stopping the latter to promote linkage in learning.

First, there is a financial support strategy for students of higher education institutions, which includes scholarship grants and examption or reduction of tuition fees. The purposes or values of the financial support system are to realize equity of opportunities for higher education and to cultivate manpower by granting scholarships, scholarship loans and other types of financial assistance to students with financial difficulties. To secure funds for financial assistance, national institutions of higher education are required to set aside as financial aid fund 30 per cent of the total admission and tuition fees of students. In addition, the national institutions are also obligated to reserve for financial assistance 30 per cent, 20 per cent, ten per cent of dues for school supporting organizations collected from freshmen and sophomores, juniors, and seniors respectively. In private colleges and universities, 20 per cent of the total tuition fees from freshmen and sophomores and ten per cent of the total fees of juniors and seniors are reserved for financial aid. In granting assistance, special emphasis was given to basic and applied sciences including mathematics and science and technology, fields of study unpopular among students, physical education and agriculture. Preferential treatment was given to promote development of science and technology, balanced development among academic fields and to cultivate competent athletes for the coming 1988 Seoul Olympics. Also, scholarship fund sources inducing excellent students were to be derived from fund sources other than admission fees. It was encouraged that the amount of the scholarship was set at the same level as tuition fees, and the reduction of the fees and the subsidy for living cost were offered to those who are extremely poor. Meanwhile, a strategy to entice an off-campus scholarship fund has been planned so that the distribution scale is enlarged and the relationship between scholarship recipients and the sponsors is strengthened. The industries, cultural foundations and the officials related to each college were encouraged to establish scholarship foundations. They were also asked to help bring about increased inducement of scholarship funds.

As one of the strategies for development and expansion of working and service scholarship, gains from school welfare facilities were used to support scholarship funds. In addition, students' extra jobs such as short-term off-campus services and temporary employment during vacation have been strengthened so that the students could help themselves study on their own. Together, formation of scholarship funds by alumni associations, and short- and long-term bank loans have been activated.

As a result of the measures to increase financial support, the ratio of the beneficiaries stood at 38.8 per cent of the total registered students or 156,702 persons among 402,979 persons in 1980, and 55 per cent in 1982, and 71.0 per cent in 1983. To divide financial assistance into scholarships and reduction of tuition fees, scholarships were granted to 6.4 per cent, 4.3 per cent, 6.1 per cent of the students in 1980, 1982, and 1983 respectively while the beneficiaries of tuition fee reduction represented 32.4 per cent, 50.6 per cent, 64.9 per cent respectively over the corresponding years. In case of the per capita assistance, it increased from 84,000 won in 1980 to 169,000 won in 1982, and to 186,000 won in 1983.

Especially noteworthy, a plan to give opportunities for continuing education to those who stopped studying due to their family or financial difficulties was implemented. It was intended to expand education opportunities for those working in industrial areas. As a concrete measure, industrial workers were encouraged to attend evening classes. In the past, it was very difficult for industrial workers to enter institutions of higher education. Those who wanted to enter an institution of higher education had to enter right after graduation or had to study further for college entrance as repeaters. Thus, there used to be an insufficient number of higher education institutions offering evening classes. In the case of junior colleges, which are the main stay of short-term education institutions, the number of evening class students was 5,270 or 14.8 per cent of the total students. As for four-year institutions of higher education the ratio amounted to 6.7 per cent (37.45 persons out of 56,085 persons). In an effort to improve these conditions, to expand educational opportunities for workers, and to make the maximum use of the existing facilities, measures to increase evening classes were taken. As a result, institutions offering evening classes increased. Of the total 441 higher education institutions in 1984, 85 schools offered only evening classes and 121 institutions offered both day-time and evening classes. By type of institution, 53 junior colleges offer both day-time and evening classes and, among four-year institutions, one institution was devoted solely to evening classes and 44 institutions had both day-time and evening classes. Furthermore, to strengthen co-operative relationship between colleges and industries, the government instructed business firms to provide higher education opportunities for their highly qualified workers. The higher education institutions were also required to make room for those workers. To provide opportunities for professional re-education and part-time education opportunities for employees, short-term special courses were opened at junior colleges, and professional graduate schools were initiated. The opening of special courses at junior colleges was approved in December, 1980 and 39 courses at a total of 20 junior colleges were established in 1981. They were divided into three courses: a three-month course, a six-month course, and a one-year course. Meanwhile, 24 professional graduate schools were established in the areas of government and business administration, education, industry, environment, sanitation, and theology. The professional schools had a combined enrolment of 6,800 students and the enrolment is expected to increase in the years to come.

In the meantime, the tendency to enter college increased among vocational high school graduates owing to favorable economic conditions and the growing need for highly qualified manpower equipped with both theoretical ability and practical skills. In line with the trend, vocational high school graduates were given preferential treatment when entering college majoring in the same area as he or she did in high school. But the preferential treatment was reduced gradually from 1981 until it was eventually brought to a complete stop in 1984 due to the fact that it had problems in terms of qualitative improvement of higher education and equity of education.

Instructional policy: This policy needs changes in the teaching and learning system. The first strategy for the changes is qualitative improvement of teaching staff and employment of excellent teachers. The Ministry of Education has tried to attract Korean scholars abroad on the programme of the fifth IBRD Loan of Education, which was designed to support engineering and the basic sciences. The plan was to introduce science and technology from advanced countries and help the output of manpower with high technological capability. Four basic directions were undertaken. First, securing professors of engineering and basic sciences. Professors in regional colleges who want to establish graduate schools for engineering and basic sciences, and the colleges with small financial capabilities were assisted. Specialists majoring in strategic technologies which would have a comparative advantage in international competition were preferred. And a short- and long-term plan to attract professors abroad was established to strengthen education in graduate schools. As a result of the policy, 100 teachers including 17 in 1981, 40 in 1982, 43 in 1983 were induced at the cost of $859,000.

Second, in-service training for qualitative improvement of professors sponsored by KCUE was given at the Academy of Korean Studies to faculty members who just returned from study abroad.

Meetings of interested persons such as Council for personnel related to ideology criticism education, seminars for chiefs in department of ethics, and summer trainings for professors of ethics have also been held. To further promote introduction of science, technology, and cultural knowledge from advanced countries and qualitative improvement of teaching staff and to deepen research activities of faculty members, the government began to send scholars abroad in 1978 at its own expense, and in 1980, overseas dispatch of professors majoring in engineering and business management was initiated under the IBRD loan project. One hundred professors benefit from the programme annually and so far a total of 1,000 professors have studied abroad for a period of one year.

Third, a model of curriculum was developed as a strategy for development of curriculum suitable for the characters of junior colleges. The rate of liberal arts subjects and majors was 20:80. But taking into consideration characters unique to each department, the rate was changed to 20-40 : 60-80 in 1982 giving more room for flexibility. Also for the effective management of departments, standard teaching materials were developed. Under the support of the Ministry of Education, departments for curriculum development have been designated and the number of the departments increased from 28 in 1980 to 40 in 1981, and 60 in 1982. In 1983, 77 departments were designated as departments for curriculum development and developed 97 kinds of textbooks.

For internal-substantiality of education, seminars were held nationwide under the auspices of the Ministry of Education. One hundred departments in junior colleges and 100 industries were tied together for a link between school and business so that students and faculty members could go through training at industrial sites. "Decree on the Criteria for Establishment of Higher Education Institutions", established in 1955 as a strategy to expand college facilities to promote efficiency of learning, was revised in June, 1983, for the purpose of securing facilities such as libraries and laboratories. As a result, in case of public and private colleges, the rate of augmentation of facilities was respectively 96.8 per cent and 90.0 per cent in 1984 and the average rate was 91.5 per cent. In case of colleges of education, the rate was 94.3 per cent. And the average rate including those of four-year colleges and colleges of education showed 91.3 per cent. Particularly, efforts for expansion of library facilities continued so that the number of libraries increased from 122 in 1981 to 133 in 1983 while the accommodation rate of students increased from 13.0 per cent as of 1981 to 14.5 per cent in 1983. In spite of this increase, it has yet to keep up with the increase in the rate of students, which amounted to 16.0 per cent in 1979. With such increase, the number of books in libraries per student has shown a decrease since 1981 from 18.4 to 15.6. Thus, together with securing of educational facilities, efforts were also made to enhance better maintenance and utilization of existing facilities, to increase investment in education and to replace outdated and old-fashioned educational facilities including laboratory facilities which were irrelevant to educational contents.

Fourth, strategies for the diversification and scientification of instructional methods in higher education were set up. Development of teaching methods in accordance with the unique characteristics of each discipline, conducting class based on the syllabus distributed in advance, introduction of teaching methods with stress on homework, and introduction of various instructional media were pursued. As a result, colleges were transformed from a place where professors lecture to the place where students learn by themselves. The expansion of pilot colleges led to a considerable progress in the teaching-learning process by promoting the use of syllabuses, the spontaneous learning through homework, the proper attitude toward learning through examinations and the use of supplementary educational equipment. Moreover up-to-date educational engineering equipment like video, video-tape, video-disc, satellite, and micro-computer were introduced and applied to class and research to promote efficiency of learning in the long-term perspective. Efforts were also made to develop the system of individualized teaching suitable for the Korean situation. By organizing committees of teaching methods in each college, new teaching methods were developed, gradually applied, and brought about changes in students' learning attitude. That is, in order to make students positively participate in the class, syllabus including contents of study, homework, and teaching and evaluation methods for the semester was prepared and distributed in advance. In addition, students were given question, answer and discussion session and roll-calling was conducted by random sampling in a large-unit class. In evaluation, a pluralistic method, which takes into account various kinds of tests, homework, classroom activities and class attendance, was adopted.

Meanwhile, as a strategy for compensation education and early graduation of students, revision of the semester system was envisaged in such a way as to address the imbalance in class hours between spring and fall semesters. As a result, the period of the first semester decreased to 16 weeks from 20 weeks whereas that of summer vacation increased from 7 weeks to 12 weeks. On the contrary, the period of the second semester remained at the same class hours of 16 weeks, and winter vacation saw a one week reduction from nine weeks. This revision was conducive to preventing loss of classes, to promoting linkage with the semester systems of foreign nations, to bridging the gap between the time of class ending and that of graduation, and to improving the utilization ratio of educational facilities. In addition, the prolonged summer vacation provided professors with an enlarged opportunity for research and other academic activities. It has also made it easier for students to make up study, to go to overseas training, to get a part-time job and to graduate early by enrolling in summer sessions, and in case of excellent students, by taking more courses than is generally permitted.

In an effort to expand broadcasting education and to develop distance learning programmes, pluralism in teaching methods was sought for. In order to strengthen students' self-study, a textbook compilation committee was organized to distribute various kinds of teaching material. Also cassettee tapes and VTR programmes were provided for students along with broadcasting education on radio. In-depth studies through supplementary materials were encouraged and elaborations on assignments were provided for students 2-3 times every semester. Education through the college newspaper as well as attending classes implemented at co-operative schools during vacation were strengthened. By holding special lectures given by distinguished scholars in the evening or Saturday or Sunday apart from the regular curriculum, the students at these institutions promoted the desire for learning and the in-depth understanding of teaching contents. Together with the efforts of the students, the institutions also provided active support for the spontaneous lecture programmes.

Resource solutions: Above all, enhancement of efficiency of equity, quality and cost of higher education should be supported by proper supply of the resources and the maintenance of them at a proper level. The resource solutions for higher education are divided into the following categories: securing of financial resources, donations, research fund assistance and an industry-school cooperative system between a community and a related institution.

The financial policy for higher education has been characterized by the beneficiary's share of educational cost since 1945. Even though the financial policy had no great changes, especially noteworthy are increased research assistance fund for faculty members, a pension system in private colleges, and elimination of tuition ceilings in private schools leading to redistribution of some percentage of tuition fee revenues to students in the form of scholarships.

Thus the rule of the beneficiary's share of educational burden was emphasized and financial support was looked away and the higher education institution has been in financial difficulties. First of all, the ratio of cost of higher education by establishment was considered. The total cost of higher education in 1979 was 187.7 billion won and the ratio of national and public institution to private colleges was 38.2:61.8. By type, the ratio of junior colleges to four-year institutions was 22:64:77.36. In 1982, the total cost was 967.9 billion won and the ratio of national and public colleges to private colleges was 32.4:67.6. The fact that the public expenditure for private higher education institutions accounts for 67.6 per cent of the total while 75 per cent of the higher education population attend private institutions illustrates that private institutions are more financially pressed than their national counterparts. Of the public expenditure, tuition fees accounted for 71.5 per cent, dues for school supporting organization accounted for 27.5 per cent, and fees for student defense corps accounted for 1.0 per cent at national institutions in 1982. But the rates of the private schools showed 69.5 per cent, 28.9 per cent, 1.6 per cent, respectively. Among the private higher education institutions, the cost for the four-year colleges accounted for 80.3 per cent while that for the junior colleges accounted for 19.7 per cent. To analyse revenues of private higher education institutions by source, tuition fees accounted for 85.7 per cent, donation and foundation transfer funds accounted for mere 8.8 per cent and property and other incomes accounted for 5.5 per cent. As has been illustrated, private schools depend heavily on students' tuition fees for finance. The ratio of dependence on tuition fees is 87.9 per cent in junior colleges, 83.4 per cent in four-year colleges and 80.5 per cent in miscellaneous schools. From the aforementioned it is clear that a student's burden is excessive; and the tuition fee differential between national and private colleges is wide. Especially in private schools the students' share is getting larger, support from foundation is extremely small and what's more, there is little donation or governmental subsidy. To cope with this, the financial scale for higher education has been enlarged since 1980. Given the situation where the education cost is mostly borne by students, strategies to redress the heavy dependence on students for revenues were implemented in such a way as to adequately share the burden among the government corporations, industry and the students. Together, efforts were made to improve the structure of the expenditure of education cost and to promote the healthy development of private school foundations. Particularly, to secure financial resources for education, a provisional education tax was introduced and all the people in the country were required to pay the tax. To overcome the relative weaknesses in finance of private schools, strategies for the "gradual enlargement of financial support for and improvement of the financial management in private schools" were attempted. Loan support for facilities expansion at private schools and support for private engineering colleges were the main targets of the strategy for financial support. The loan system was adopted in order to solve the urgent problems resulting from the rapid increase in student population unaccompanied by the comparable expansion of facilities. The government financed 80 billion won as a fund for long-term expansion of facilities for three years; 40 billion won to 58 colleges in 1981, 20 billion won to 52 colleges in 1982, and 20 billion won in 1983. The loan, granted under the terms seven-year payment by installment with a three-year grace period, was confined in its use to the expansion of such physical facilities as school buildings, libraries, student halls, and dormitories. The government loan contributed greatly to the improvement of educational environment at private schools. Financial support for private engineering colleges was set at 19.5 billion won, 3.9 billion won each year, for five years from 1982 in accordance with the guideline set by the government to foster heavy and chemical industries. The support was intended to improve the quality of engineering education and to increase educational investment. In 1982, based on the number of students 87 million to 200 million won was granted to engineering colleges. In order to promote efficiency of the financial management of schools, integration of accounting, rearrangement of budget items, integration of laboratory fees and autonomous fees into school accounting were proceeded. In compilation of a budget, it was recommended that schools use the proper model for financial distribution. In addition, private schools with the graduation quota of over 500 were required to have their balance sheets signed by a certified public accountant before they submitted them. It was intended to tighten self-control and to promote public confidence in private institution's finance. Also, in an effort to reform the system of accounting, "special regulations governing finance and accounting in private education institutions" was enacted and promulgated in February, 1982.

Industry-school co-operation has been practised since 1963 when the industrial education promotion law was legislated. While it is true that both higher education institutions and industries have shared their personnel and material resources, the co-operative efforts have not yet brought about fruitful results due to lack of research activities, lukewarm attitude of industries, lack of channels for information flow, and lack of a mediator institution for industry-school co-operation. In order to further foster school-industry co-operation, the following, among other things, are required: rearrangement of industry-school co-operation system, development and introduction of programmes conducive to school-industry co-operation, mutual exchange of personnel between schools and industries, joint establishment and management of laboratories, and joint strategy for social service.

Chapter Six

CONCLUSION AND RECOMMENDATIONS

Summary

Objectives and concepts of the study: The broad objectives of the study are to investigate problems and issues concerning equity, quality and cost in higher education in Korea; to present and analyse the experience of Korea on these aspects; and to suggest policies, strategies and measures to promote equity and improve quality through cost effective methods. In order to meet these objectives, the concepts of equity, quality and cost of this study are approached as follows. Equity is focused to achieve the equitable opportunities in terms of access, choice and quality of higher education. Quality implies in general a high level and standard of performance of the system of higher education. And costs are defined as the amount of resources spent on providing higher education.

Methodologies of the study: The population of the study was targeted to all degree or nondegree programmes on undergraduate and graduate levels. System level data was collected for a period of five to ten years to provide a comprehensive description of trends in enrolment, resources, and costs by referring to available statistical information. Institutional data was collected through case studies based on two selected institutions, Seoul National University and Yonsei University, and referred to a period of not more than three years.

Results of the study: The study entailed analysis of the problems and issues relating to equity, quality and cost at two levels, namely the national level and the institutional level followed by a third phase which described and analysed policies and programmes of higher education on three points.

A. Situational analysis at national level

1. Equity of higher education: In order to review the equity of higher education, accessible situation, status of equity, and realization of opportunities for higher education are analysed.

The freshman quotas for institutions of higher education have recorded a substantial increase in the last ten years except for teachers' colleges. The rapid growth in student enrolment quotas is mainly due to two factors; the increased need for highly educated manpower as a result of the economic boom of the 1970s and the implementation of the graduation quota system in 1980. However, this type of large-scale expansion fails to meet the social demands of the Korean people. Koreans have a strong preference for four-year institutions of higher education over two-year ones. It is also worth noting that more colleges are advancing toward graduate schools. The growth in graduate school enrolment is directly related to the recent business slump, which leaves many college graduates unemployed. A considerable segment of the unemployed college graduates apply for admission to graduate schools.

In this situation, in order to expand the educational opportunities for those who have completed a short-term courses or interrupted higher education, the Air and Correspondence college has been upgraded from a two-year institution to a five-year institution, and an open college with four-year curricula has been established. However, teachers' colleges give special benefits to male applicants when selecting their freshman students because the elementary and secondary school teaching staffs are predominated by female teachers year by year.

Tuition fees and scholarships are very important variables to those who wish to obtain higher education but who posses insufficient financial resources. The tuition fees are determined by MOE and EPB. In terms of equity by sex, a larger proportion of female students are granted financial aid than their male counterparts in institutions of higher education except for teachers' colleges. It seems that granting more financial assistance to male students at teachers' colleges has been brought about by a policy consideration to attract more male students to the institutions.

Policies regarding the entrance examination, tuition fees and scholarships have exerted influence over the access to opportunities for higher education. A distinctive feature of the examination system in relation to equity is its way of reflecting applicants academic ability, and performance in high school in the selection process. The system regards all high schools in the nation as equal in quality, even though it is generally agreed that the high schools in cities maintain higher academic standards than those in rural areas. As for tuition fees, nonformal education programmes of higher education such as Air and Correspondence college and open college are less expensive than formal four-year universities. This leads to a situation where a student who has job but has unequal opportunities for higher education, has accelerated the opportunities for higher education.

Equity in higher education is a basic goal to be realized in democratic society which insists on equal educational opportunities. The equal educational opportunity is designed to guarantee the right to educational benefits regardless of sex, region, social class and economic conditions. Higher education mostly relies on private schools as 67 per cent of all students attending higher education institutions are enrolled in private schools. The proportional enrolment in private schools is 90.5 per cent in junior colleges, 49.3 per cent in four-year open colleges, 73.9 per cent in colleges and universities, 71.6 per cent in graduate schools and 100 per cent in miscellaneous schools. In terms of region, 31.3 per cent of the school going population attend schools in Seoul. It is higher percentage comparing to the Seoul population portion, 23.8 per cent of the total population. Reviewing the ratio of female students, it was increased in 2.4 per cent during the last ten years. In terms of the student distribution by age, colleges or universities are not equipped with a proper a system for continuing fields like adult education such as the Air and Correspondence college and open colleges.

As data to analyse the socio-economic status of students' parents are not easy to obtain, only the case of the Seoul National University is available. A socio-economic status can be measured by various methods, but the only data available here is the distribution of schooling of parents in SNU. The ratio of parents who received college or graduate school education in Seoul National University is 42.5 per cent in 1980 and 43.7 per cent in 1985 but percentage distribution of higher education of population 25 years of age and over is only 8.9 per cent. This means that the opportunities for Seoul National University may be opened to high socio-economic class. There is no restriction for foreigners to study, but in the true sense of the word, there are only a handful of foreign students. Scholarships are given to foreign student according to their Korean language ability but their tuition fee is the same as their Korean counterparts.

In particular, the reality of Korea can hardly satisfy the social demand for higher education in spite of educational policy changes such as the graduation quota system. One of the primary reasons to receive higher education is to be qualified to select a job one wants. Therefore opportunities for higher education are directly linked with one's profession and to some degree with social status. But unemployment in 1980 was 9.3 per cent, which soared to 18.5 per cent in 1985, because the number of graduates has increased 3.5 times in 1985 compared with 1980, and the expansion of economic structure has stopped. These symptoms give stress to the students who always participate in campus demonstration.

2. *Quality of higher education:* In this section, we review the quality of higher education in terms of input, process and output. Determinants of quality in terms of inputs are classified into quality of faculty resources and promotion, educational environments, facilities, equipment, and research environment.

Quality of faculty resources affects the teaching-learning process in two respects. The teacher plays the leading role in the planning, overall management and evaluation of lectures and individual characteristics of a teacher tend to be translated into the characteristics of lectures through student-teacher interactivity. It is worth noting that the ratio of teaching staff with doctor's degree is on the increase. However, the ratio of teaching staff with doctor's degree is 27.8 per cent which is mainly affected by the history of higher education. Inexperienced faculty members form the main body of higher educational institutions.

Institutions of higher education select new faculty members through open competition on the basis of the GPA at the graduate or undergraduate level, research career, and degrees awarded. However, the common practice still is to make selections within the same academic school. The Korean Council for University Education provides a two-week programme including ideology, teaching methods and economics education for new faculty members.

The faculty-student ratio stood at 1:34 as of 1985, which is much higher than that in many other countries. The deterioration of the ratio has been brought about by the rapid growth in the number of students following the implementation of the graduation quota system. The decreased faculty-student ratio has in turn reduced contact hours between students and teachers, thus adversely affecting the efficiency of the instructional process.

Facilities requirements for institutions of higher education are prescribed by presidential decrees such as the decree on the criteria for the establishment of colleges and universities, the decree on the criteria for the establishment of junior colleges, and the decree on the criteria for the establishment of open colleges, colleges, universities, and teachers' colleges met 89 per cent of the school land area requirements as of 1984. By type of establishment, national institutions met 96 per cent of the requirements whereas the ratio of their private counterparts stands at 87 per cent. As for teachers' colleges, which are national institutions, the ratio stands at 86 per cent. Institutions of higher education met 92 per cent of school building requirements. By type of institution, the ratio of national institutions remains at 97 per cent whereas the ratio of private institutions stands at 91 per cent. Faculty members with full-time instructorship and above at colleges and universities have their own individual offices, whereas the professor's offices available in junior colleges amount to only 63 per cent, making it inevitable that some faculty members share one office.

Equipment requirements for institutions of higher education are prescribed by presidential decrees such as the decree on the criteria for the establishment of colleges and universities, the decree on the criteria for the establishment of junior colleges, and the decree on the criteria for the establishment of open colleges. The decree on the criteria stipulates that laboratories and practical training rooms, play grounds, seats and the volumes of book in the library, auxiliary facilities in national institutions of higher education met 3.1 per cent of school building requirements and private institutions met 54 per cent of the requirements. So it is undertow comparing to the equipment requirements by the law.

The major functions of universities are often referred to as teaching, research and community services. Of those functions research activities contribute to the development of advanced knowledge and technology. In order for the research activities to be carried out properly, they should be supported by sufficient research funds such as funds for personnel and experiment expenses. In this phase of the study, analysis of research environment will be made with emphasis on the expansion of research fund beneficiaries, increase of unit research funds, and the status of off-campus research projects and funds. Per faculty research project stands at 0.29, and 43.4 per cent of research project come from off-campus organizations. The average research fund per research project stands at 1,920,000 won. From these data, research activity on higher education is not still underground.

Determinants of quality in terms of instructional processes are classified into management of curriculum, class preparation, instructional methods and method of study evaluation. The curriculum of higher education is basically under the responsibility of each institution. However, the ratio between liberal arts and majors is determined by law. As for unviersities and colleges, the minimum earned credit hours required for graduation are 140. The curriculum of colleges is made up of liberal arts and majors, and they are divided again into compulsory and elective courses. The liberal arts courses are for nurturing students' personality as leaders, and majors are for direct academic researches. The standard credit ratio of liberal arts is 30 per cent of the total credit hours. Each semester's standard credit hours is 18, with 21 as maximum. For limited superior students, it is made possible to earn as many as three credit hours over the maximum credit hours, which makes possible early graduation. Also it is possible to earn up to 12 credit hours over the maximum through special examinations.

Post graduate students winning over 24 credit hours after one year or more of study at a graduate school and having passed examinations are qualified to submit a thesis. Students winning over 60 credit hours in majors (including credits for a master's degree) after three or more years of graduate study and having passed two foreign language tests and comprehensive qualifying examinations are qualified to submit doctorate dissertations. Ph. D. degrees are granted to those who have passed dissertation inspections and oral tests and received the degree awarding decisions from the Graduate School Committee.

The weekly average lecture hours per professor is 10.78, while the minimum requirement being nine hours. The average number of texts per course is one main text and two supplementary texts. The rate of syllabus preparation is around 85 per cent, while the rate of syllabus distribution remains around 20 per cent.

The evaluation of student's study results has traditionally been the most important determinants in instructional methods in the sense that it serves as a directive to determine study methods. According to the national average, the final examination accounts for the highest portion, 32.2 per cent and next comes mid-term examination (26.7 per cent), home assignment (15.4 per cent), attendance (10.6 per cent), presentation (7.2 per cent), and quizzes (6.2 per cent).

Determinants of quality in terms of output are classified into employment, student achievement, research and community services. To consider the status of graduates' employment as a determinant output in higher education is an excessive simplification. The member of employees with higher education had grown 3.9 times as much in 1975 and 2.7 times as much in 1980. A distinctive feature in this regard is that the number of those employed shows a rapid increase among graduates of two-year junior colleges while the number of those employed among graduates of graduate school is gradually increasing. It is important to evaluate the credentials of students very carefully inasmuch as there is as great a difference in the quality of colleges and universities in Korea as there is in the United States; these differences in quality range from department to department within a college as well as between and among colleges and universities; it is possible that a student from a top college or university may be in the bottom 30 per cent of the class and thus may not receive a degree while at the same time a student from a less academically rigourous institution may receive a degree; and for employment purpose, there is not a great deal of difference between degree and the document certifying completion. The academic reputation of the college or university is more significant in relationship to employment.

Research activities of professors should be conducted in a variety of ways and wide ranging, in both material and psychological dimensions, comparable to international standards as in other areas. Research activities usually take the form of the following; publication of theses and books, research-purpose trips, both domestic and abroad, and publication of collected essays. The number of papers released per professor is 4.87 during the five-year period and approximately one per year. The number of book publications per professor during the last five-years is 0.56, only one for ten years. National universities maintain higher positions in publication of books and collected essays; private universities take lower positions in collected essays but similar positions in the publication of books. The average number of a professor's research-purpose trips abroad is 0.46, which means that during the last five-years 46 out of 100 professors participated in overseas academic activities. On the other side, research-purpose domestic trips are frequent and active, due to their low costs. The average frequency is two times a year per person.

Schools should play a leading role in community development while the regional community should co-operate in the development of regional schools. Such schools are called, community schools and colleges are required to actively promote such roles. Community services are carried out after school hours as part of school activities by colleges, departments, and student circles. Those community services should be actively expanded during summer and winter vacations. Items of community services are diverse. These include providing helping bands to agricultural and fishing communities, providing entertainment and service for the elderly, campaigning for preservation of natural resources, medical services, conducting night classes, technical services to agricultural and fishing communities, services to handicapped children, early childhood education, education and labour services, citizens' legal counselling, etc.

3. *Costs of higher education:* Both the national government and society need to establish a suitable financial system to enable higher educational institutions to efficiently fulfill their functions. Only then the environment can achieve efficiency and social accountability of education and research be nurtured. The financial situation of higher education institutions has been improved remarkably compared to the past but has not departed from its smallness.

Private institutions in particular are not favoured by government subsidies unlike national institutions.

The total public cost of education spent through public accounting procedures, accounted for 6.5 per cent of the GNP in 1985. Of the public expenditure for education, colleges and universities comprised 24.8 per cent and junior colleges accounted for 4.4 per cent. The educational cost per student in 1982 both current cost and constant cost increased compared to 1977. However the normal and real costs decreased during 1982-1985 because of the rapid growth of the number of students.

As for the trends of compositional ratio by financial sources, governmental and school corporate payments have increased, while student payments have been on the gradual decrease. In 1979, more than ten per cent of the financial resources were paid by the government in national universities and colleges; in private institutions more than 85 per cent was paid by students. That is, private higher education institutions depend mostly on student-paying admission fees, tuitions, examination and other fees for finance. Revenues from basic property such as property income, business income, investment income and borrowed income has gradually increased since 1970 whereas donations have been on the decrease. As donations, which constituted a major income source in the past, decrease, the proportion of such incomes as, basic property income and borrowed income has relatively increased.

Due to the rapid growth in facilities investment following the growth of the student body since 1980, the personnel cost does not show much fluctuation; the ratio of operation cost drops; and the ratio of facilities cost grows in junior colleges. As for universities and colleges, the ratio of personnel cost is growing; the ratio of operation cost dropped and then rising and the ratio of facilities cost rose and then declining. Such a trend has been brought about by a rapid increase in student population with the implementation of the graduation quota system.

There are considerable difference between national and private institutions in the composition of expenditure. In junior college, the ratio of personnel expenses are higher in national and public schools; the ratio of equipment and facilities is higher in private schools; and operation cost is similar in both. In universities and colleges, the ratio of personnel cost is higher in national and public schools while the ratio of equipment cost is higher in private schools.

As for research expenditures of higher educational institutions, universities and colleges provide as research funds less than 5 per cent of the total funds raised by government, public organizations, private sectors, and foreign countries. Research funds invested into higher education institutions are excessively small compared to those invested in research institutions or business corporations.

B. Case studies

1. Background of the study: Two universities, Seoul National University as national institution case and Yonsei University as private institution case, are selected for the case studies. Both of them are the oldest and the most prestigious universities. Besides, they are also the leading universities with strong influence on the policies of other universities. Used in this case study are the data collected from the universities and colleges for the compilation of the Statistical Yearbook of Education by the Ministry of Education and the materials from the reports on self-analysis of individual institutions designed for the evaluation of universities conducted by the Korean Council for University Education. As for the materials unavailable from these sources, efforts were made to obtain them through interviews with the people concerned in universities and colleges. These materials were utilized to resolve such research subjects as; (1) How have the two universities made efforts for realization of equity and what are the results?; (2) How did these universities carry out plans for quality improvement and what were their accomplishments?; (3) For the improvement of equity and quality, was the securement of financial sources appropriate and was the expenditure proper?

2. Equity: In terms of equity, there is no restriction on sex, age, region, social origins and religion to apply for the admission to both Seoul National University and Yonsei University. Since only excellent students usually concentrate on these universities, entrance competition rates of these two universities are lower than those of other universities. The average admission rate of all universities in 1985 school year was 39.5 per cent, which was lower than those of these two universities. The characteristics of Seoul National University and Yonsei University can be analysed in two aspects: distribution of students by region, age and sex; distribution of student's parents' by occupation and educational background. Also the equity of opportunities can be handled from the aspects of distribution by region and sex. In dealing with these aspects, Yonsei University could not be handled in detail due to difficulties in collecting data, and thus the analysis is made mostly with SNU.

On the whole, due to the growth of the student body by the implementation of graduation quota system, the rate of student numbers among the total population has increased. By native province, the largest number of students are from Seoul compiled 29.7 per cent among total students in 1985, showing higher portion comparing to the percentage of Seoul population among total population. So this shows the disparity between Seoul and other regions. It may be because many excellent students have already moved into Seoul before they enter college. In distribution of students by age, students age 22 and below constitute 84.9 per cent in Seoul National University, and 81.3 per cent in Yonsei University. The tendency that female students are younger than male students has to do with the facts that male students have to fulfill their military obligation and the rate of repetition for college entrance is higher among male students. The equity in opportunities between male and female students has somewhat improved. From the guardian's occupation of SNU, the rate of guardians in agriculture and fisheries rose from 13.0 per cent in 1980 to 14.8 per cent in 1985 and the rate of guardians in transportation and communication rose from 2.6 per cent to 6.2 per cent. Compared with 1980, guardians' educational background became higher in 1985. Even though there is no restrictions on equity of admission, the disparity by social origins, ages and sex is still high.

3. *Quality:* The ratio of professor per students, which is regarded as a factor of utmost importance for the proper performance of a professor's academic activity, is increasing both in SNU and YU as in other universities because of graduation quota system, which resulted in the expansion of the student body unaccompanied by the comparable growth in the number of faculty members. In YU, the increase has been much as 12.3 students per professor, thus making the conditions of professors worse than those in SNU. Generally, SNU has more professors with doctor's degree than YU, whereas YU has more professors with master's degree or less than

SNU. Comparing across the nation, these two universities have higher quality at the aspects of doctor's degree, teacher-student ratio, and teaching experience.

While SNU promoted expansion of facilities with future prospects in mind in accordance with its campus comprehensive plan, and thus did not show drastic changes, YU had to invest more in facilities compared to SNU. In total volumes of books in central libraries, SNU has twice the number of YU. There is little difference in the number of seats. The size of the library budget is larger in YU, indicating that YU is making a greater effort in the expansion of library equipment and facilities.

As for the fund granted to professors per research, which is one of the important functions of a university, it has been decreasing in SNU, while it has been increasing in YU. The result is, the entire volume of research funds of SNU in 1980 was three times that of YU, but in 1984, it was reduced to less than twice that of YU.

The qualifications of a professor are evaluated based on years of research conducted and years of teaching experience, and it is normally required that more than two research papers be published every two years. The standard of professors' research activities can be understood by the number of publication of research papers per professor, the number of book publication per professor, and the kinds of collected essays published by the university. By 1984 standards, during the past five-years the number of research paper publications and the number of book publications in SNU were 9.70 and 1.33, respectively, and in Yonsei University, 5.37 and 0.52, respectively. It follows that SNU shows more than twice the research activities than that of YU. Professors participating in community services account for 18.3 per cent of the entire teaching staff of SNU. The rate is 7.4 per cent higher among faculty members of YU. In the participation rate of students, However, YU shows a higher rate than SNU. There is not much difference between the two universities in the number of community service programmes.

4. Costs: The educational cost per student by 1984 standards is 1,607,000 won in SNU and 1,868,000 won in YU. In view of the fact that the educational cost per student in 1981 of YU was 1,257,000 won in 1981. The educational cost has not increased much when we consider consumer price increases. Total annual payment per student in 1984 was 722,000 in SNU and 1,513,000 won in YU. In YU, the dependence on student payments among total educational costs is gradually decreasing, thanks to the management policy to reduce beneficiary's share of burden. As a result, the rate of dependency on student payments was reduced from 85.8 per cent in 1981 to 74.2 per cent in 1984. Though the dependence on students dropped, student payments have increased almost every year in overall amount. From the university's point of view, despite the fact that student payments have increased, financial revenues remained about the same in real value.

The revenues of university costs are composed mainly of student payments, transfers from the national treasury account, donations, transferred incomes, and loans. The composition rate varies depending on whether the institution is national or private. In SNU, transfers from the national treasury account comprise 51.4 per cent, higher than the rate of student payments, which is 45.0 per cent. The combination of student payments and transfers from the national treasury account stands at 96.4 per cent, which is almost all of the school's revenue. In contrast, in YU, transfers from the national treasury account remain at 0.9 per cent, and the revenue depends mostly on student payments, donations and transfers, loans and other miscellaneous incomes.

The management objectives of YU are characterized by reduction of beneficiary's burden, optimal distribution of educational costs, improvement of faculty member's professionalism, upward utilization of profitable properties, and promotion of sound financial management of the university foundation.

C. *Policies, programmes and strategies*

1. Background: This phase of the study will describe and analyse policies, programmes and strategies on equity, quality and cost in higher education over the last five to ten years. In addition, it will also identify and discuss unintended outcomes which have appeared in the implementation of the policies, together with the evaluation of those policies. For the purpose of the study, the programmes and strategies intended to influence equity, quality or cost factors will be analysed under structural, administrative, instructional, and resource solutions.

2. *Structural solutions:* In connection with higher education and social education, Korea has a strategy to foster and reinforce open colleges and Air and Correspondence college as nonformal education. Both are intended to offer educational opportunities of the college or junior college level to those industrial workers who have completed or have had an interruption in school education. Their purpose is to upgrade manpower contributable to the development of society and the nation.

To cut down the intense competition in the entrance examinations and overzealous private-tutoring, the reform has allowed institutions of higher education to admit freshman students up to 30 per cent over the graduation quota from 1981. Particularly, this policy to bridge the gap in education that existed between various regions and national and private institutions were implemented to promote the equity of higher education.

3. *Administrative solutions:* For promoting efficiency of the quality, equity and cost of higher education, Korea has two administrative solutions in the direction of the financial and institutional strategies; the former is to let students study without stopping, the latter to promote linkage in learning. There is a financial support strategy for students of higher education institutions, which includes scholarship grants and exemption or reduction of tuition fees. The purposes of the financial support system are to realize equity of opportunities for higher education and to cultivate manpower by granting scholarships, scholarships loans and other types of financial assistance to students with financial difficulties. To secure funds for financial assistance, national institutions of higher education are required to set aside as financial aid fund 30 per cent of the total admission and tuition fees of students. In private colleges and universities, 20 per cent of the total tuition fees from freshmen and sophomores and ten per cent of the total fees of juniors and seniors are reserved for financial aid. As one of the strategies for development and expansion of working and service scholarships, gains from school welfare facilities were used to support scholarship funds. In addition, students' extra jobs such as short-term off-campus services and temporary employment during vacation have been strengthened so that the students could help themselves study on their own.

Especially noteworthy, a plan to give opportunities for continuing education to those who stopped studying due to family's financial difficulties was implemented. It was intended to expand education opportunities for those working in industrial areas offering evening classes. To provide opportunities for employees, short-term special courses were opened at junior colleges, and professional graduate schools were initiated.

4. *Instructional policy:* This policy needs changes in the teaching and learning system. The first strategy for the change is qualitative improvement of teaching staff and employment of excellent teachers a short and long-term plan to attract professors abroad was established to strengthen education in graduate school. Second, in-service training for qualitative improvement of professors sponsored by KCUE was given at the Academy of Korean Studies to faculty members who just returned from studying abroad. Third, a model of curriculum was developed as a strategy for development of curriculum suitable for the characters of junior colleges. Fourth, strategies for the diversification and scientification of instructional methods in higher education were set up. Development of teaching methods in accordance with the unique characteristics of each discipline, conducting class based on the syllabus distributed in advance, introduction of teaching methods with stress on homework, are in production of various instructional media were pursued.

5. *Resource solutions:* Enhancement of efficiency of equity, quality and cost of higher education should be supported by proper supply of the resources and the maintenance of them at a proper level. The resource solutions for higher education are divided into the following categories; securing of financial resources, donations, research fund assistance and an industry-school co-operative system between a community and a related institution. The financial policy for higher education has been characterized by the beneficiary's share of educational cost. Even though the financial policy had no great changes, especially noteworthy are increased research assistance funds for faculty members, a pension system in private colleges, and elimination of tuition ceilings in private schools leading to redistribution of some percentage of tuition fee revenues to students in the form of scholarship. Thus the rule of the beneficiary's share of educational burden was emphasized and financial support was booked away and the higher education institution has been in financial difficulties.

Conclusion and recommendations

First of all, higher education has been developed on the basis of equity perspectives. The policies for equity of higher education are as follows: expansion of enrolment by the graduation quota system, establishment of open colleges to promote a life-long education system; and an increase of scholarships. As a result, the number of students increased twofold in 1984 compared with 1980. The number of institutions also increased from 74 in 1978 to 99 in 1984. During the same period, the number of graduate schools almost doubled to 186.

With the rapid increase of college students, higher education reached the stage of mass education. This has resulted in a severe shortage of educational equipment and facilities and a serious unemployment problem among graduates. For example, 13.7 per cent of college graduates entered an institution of higher grade and 51.1 per cent were employed in 1981. The figures showed a downward trend in 1983 to 12.6 per cent and 49.8 per cent respectively. Also noteworthy in this regard is the rate of those who ended up in working in their areas of study. The rate decreased from 81.7 per cent in 1981 to 79.9 per cent in 1983.

The rapid quantitative increase in student population and sluggish job opportunities resulted in the psychological unrest among students, adversely affecting the efforts for the stabilization of campuses. Special programmes established at junior colleges as a strategy for the expansion of re-education opportunities for those employed also need improvement. Some of the prominent problems existing in those programmes are lack of institutional guarantee for recognition of credits and certificates taken at the programmes and unreasonable tuition fees.

Secondly, even though support for teaching staff, facilities, and educational finance as a strategy for equity of educational environments led to considerable effects, the rapid increase in student population reduced the policy effects. The ratio of augmentation of faculty stood at 70 per cent and the student faculty ratio remained at 34.1:1 in the case of private institutions, the ratio stood at 36.7:1.). In the distribution of teaching staff by degree, the rate of doctoral degree holders accounted for 30.2 per cent of the total teaching staff in 1983 showing a little increase in comparison with the previous year (The figure in private schools showed 29.1 per cent). In educational facilities, the concentrated investment in provincial institutions was very fruitful in narrowing the gap between regions. But on the average facilities are still insufficiently secured. As for finance, though the regional gap in current unit cost was reduced, the gap between national and private schools are even wider.

Thirdly, promotion of efficiency in curriculum management and diversification of teaching-learning methods were pursued by individual institutions as a strategy for qualitative improvement. Particularly, the development of curriculum and teaching materials in junior colleges has succeeded due to the increase of support within the context of industry-school co-operation. Promotion of an academic co-operative system among colleges and exchanges of professors have been briskly performed. Despite the positive effects, this strategy, which was implemented within the framework of control, is in conflict with the ideal of expanding autonomy in higher education. In particular, division of management and administration in private colleges, which was intended for the development of private schools, has raised a problem of efficiency in financing private schools and often ended up with behind-the scences intervention of the management in school administration. Such being the situation, there is a need for partial revision of this strategy.

Fourthly, promotion of professionalism among administrative staff and the efforts for the improvement of financial management system of private institutions implemented as a strategy for upgrading the efficiency of cost has brought about fruitful results. The evaluation of the efficiency of input and output by the University Evaluation Committee of the Korean Council for University Education has especially made a considerable contribution in this regard by presenting prescriptions for the promotion of efficiency. However, due to the lack of academic recognition the efficiency of cost, effective prescriptions on this matter based on the accurate diagnosis are insufficient.

From this analysis, the policies and strategies for the improvement in equity, quality and cost in higher education have problems in the maintenance of balance and integrated development. Some of the recommendations in this context are as follows.

First, there is an urgent need for an organization which takes full responsibility for the planning, diagnosis and execution of equity, quality, and cost in higher education so that comprehensive strategies regarding these can be worked out through this organization.

Second, as a strategy to promote qualitative improvement and equity in educational environment, programmes such as the cross registration and joint lectures should be further expanded among institutions in neighbouring provinces. In addition by taking measures to induce prominent scholars to institutions in provincial areas, we can bring about at least the partial improvement in the regional gap in terms of equity in higher education.

Third, to promote co-operation among higher education institutions, between higher education institutions and industrial organizations, and between various research institutes of a higher education institution, formation of a co-operative research institute or integration of research institutes similar in nature should be sought.

Fourth, to secure financial resources for the balanced development of higher education, especially that of private school education, measures to induce donations and contributions need to be taken within the framework of school-industry co-operation.

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